The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

P. C. LAUINGER, *President* — *Editor*, C. O. WILLSON

W. T. ANDERSON, *Managing Editor* — JAMES McINTYRE, *Consulting Editor*

W. T. ZIEGENHAIN, *Engineering Editor* — L. G. E. BIGNELL, *Prod. Engineering Editor*

C. K. FRANCIS, Ph. D., *Technical Editor* — W. L. NELSON, *Metallurgical Editor*

Associate Editors

T. F. SMILEY — T. P. SANDERS

DAL DALRYMPLE — PAUL REED

District Editors

Houston, *Sterling Bldg.*
NEIL WILLIAMS — F. L. SINGLETON

Fort Worth, *Petroleum Bldg.*
D. H. STORMONT

Shreveport, *City Bank Bldg.*
GEORGE WEBER

Los Angeles, *Union Oil Bldg.*
L. P. STOCKMAN

Washington, *Natl. Press Bldg.*
HENRY D. RALPH

Saginaw, *News Bldg.*
O. C. PRESSPRICH

Denver, *State Office Bldg.*
TOLBERT R. INGRAM

New York, *415 Lexington Ave.*
H. STANLEY NORMAN

Oil City, *Derrick Bldg.*
J. P. O'DONNELL

Chatham, Ontario, *Box 136*
VICTOR LAURISTON

S. H. ROURKE, *Business Manager*

M. F. BALDWIN, *Circulation Manager*

Advertising

E. KLAPPENBACH, *Vice President*

New York, *415 Lexington Ave.*
C. L. CAIN

Cleveland, *Leader Bldg.*
HOWARD MARKT

Chicago, *300 W. Adams St.*
C. R. FARMER

Tulsa, *114 W. 2nd St.*
KENNETH J. LANGLEY

Houston, *Sterling Bldg.*
WAYNE RIVES

Los Angeles, *1406 S. Grand Ave.*
J. HOWARD TINKHAM

Cologne, Germany—*1 Laudahnstrasse*
A. J. CHAMBERS

Table of Contents

Vol. 37, No. 22 — October 13, 1938

News Developments

Summary ... 21
Sparks From the News ... 22
Industry Again at the Crossroads ... *H. Stanley Norman* 23
Major Crude Buyers Reduce Prices in Six States ... *James McIntyre* 25
Creative Rate Regulation for Natural Gas Industry ... *Joseph E. Pogue* 26
Distillate Wells A.I.M.E. Problem ... *Neil Williams* 27
S.A.E. and Refinery Engineers Discuss Common Problems ... 29
National Safety Council Petroleum Division Meeting ... 30
Editorial: Ebb and Flow ... 31
Programs and Meetings ... 32
News From State Capitals ... 33
North American Gasoline Tax Conference ... 34
Crude Stock Survey Reassuring to Industry ... *L. G. E. Bignell* 35
Pipe Line Activity ... 38
Natural Gas News ... 38
Refinery Progress ... 39
Natural Gasoline News ... 39
News From Foreign Lands ... 41

Engineering—Operating

Safety ... 42
Difficulties of Killing Blowout in Coastal Louisiana Well ... *Neil Williams* 44
Oklahoma City Dolomite Wells Show Rapid Production Decline ... *Harry Simons* 49
Wrinkle Bending Useful in Laying Pipe Line in Rough Country ... 50
Metals Progress ... *W. L. Nelson* 53
Conservation by Recycling, Repressuring and Storing Gas ... *D. H. Stormont* 56
Operating Ideas ... 59
Supplementary Barrel Checks Scale Trouble on Sucker-Rods ... *J. P. O'Donnell* 61
Questions on Technology ... *C. K. Francis, Ph.D.* 63
Problems From Readers ... *L. G. E. Bignell* 64
General Reduction in Mid-Continent Refinery Crude Runs in October *W. T. Ziegenhain* 66

Field Operations

Field Operations Summarized ... 69
Illinois-Kentucky-Ohio ... 70
Eastern Fields ... *Staff Correspondent* 75
Michigan ... *Otto C. Pressprich* 77
Louisiana and Arkansas ... *George Weber* 78
Gulf Coast ... *Neil Williams* 80
Southwest Texas ... *F. L. Singleton* 84
Among Drilling Contractors ... 86
California ... *L. P. Stockman* 88
Oklahoma ... *Dal Dalrymple* 92
Rocky Mountain Area ... *T. R. Ingram* 95
West and Central Texas and Panhandle ... *D. H. Stormont* 99
North and East Texas ... *D. H. Stormont* 101
Canada ... *Victor Lauriston* 103
Kansas ... *Dal Dalrymple* 104
Wildcat Operations ... 109
Key to Abbreviations ... 109

Markets and Prices

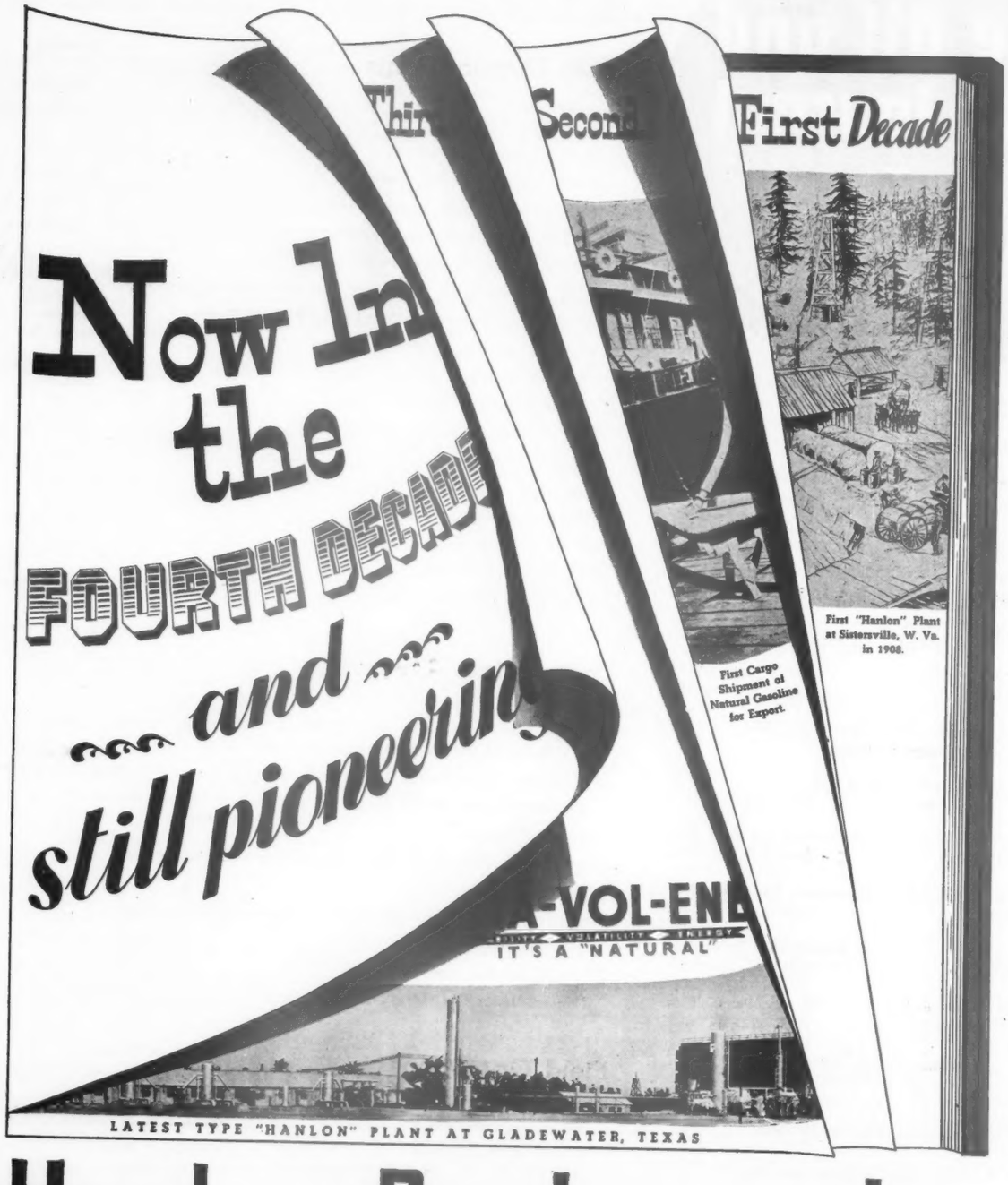
Group 3 Market ... *T. F. Smiley* 118
A.P.I. Refinery Report ... 119
New York Market ... *H. Stanley Norman* 119
Tank-Wagon Market ... 120
Refinery Prices ... 121
Crude Prices ... 122-127

Additional Features

Personal Paragraphs ... 116
Record of Oil Securities ... 123
Equipment News ... 124
Classified Advertising ... 126
Oil Man's Calendar ... 127
Advertisers' Index ... 128

SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

Copyright, 1938, by The Petroleum Publishing Company



Hanlon-Buchanan, Inc

PIONEER NATURAL GASOLINE MANUFACTURER

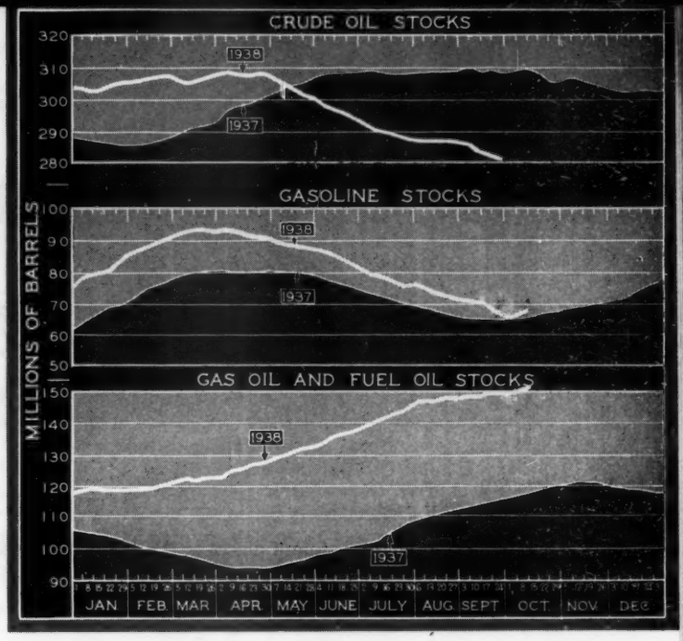
EXPORT TERMINALS:
Goodhope, La.
Houston, Tex.
Baytown, Tex.
Corpus Christi, Tex.

TULSA, OKLAHOMA
NATIONAL BANK OF TULSA BUILDING
PHONE 4-1101 or L.D. 358 WIRE — OR WRITE P. O. BOX 1559
Cable Address ..... STAVOLENE, Tulsa, U. S. A.

FOREIGN REPRESENTATIVE:
Sarles, Williams & Co. Ltd.
4 Lloyd's Ave.
London, England

Trends

Lower Crude Prices Reach Mid-Continent and Gulf Coast Areas


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1937
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

REDUCTIONS in crude prices, which started in the Eastern fields September 1 and spread to Michigan, Kentucky and Illinois, and to one or another pool in Arkansas and Texas late in September, reached the Mid-Continent and Gulf Coast producing divisions in the past week. The reductions in Texas, Louisiana, Arkansas, Kansas and Oklahoma ranged from 13 to 20 cents per barrel.

Various reasons are assigned for the steady run of lowered crude prices that have affected every producing division in the country outside of California and the upper Rocky Mountain area in the past six weeks. Some refiners have shut down plants because the refinery price of gasoline was too low to warrant buying crude oil at the prevailing price, while others have, instead, cut their crude prices, or assessed producers with a substantial gathering charge, rather than lower the prevailing posted prices. The Standard Oil Company of Louisiana in lowering crude prices in Louisiana and Arkansas on October 5 gave as its reason that crude in large volume had been thrown on the market at lowered prices by producers in fields in which Standard buys. One company that buys in North Texas and southern Oklahoma claims it has been running its refinery at a loss since the first of the year and was forced to do one of two things, cut crude prices or quit purchasing the raw product, so it chose the former.

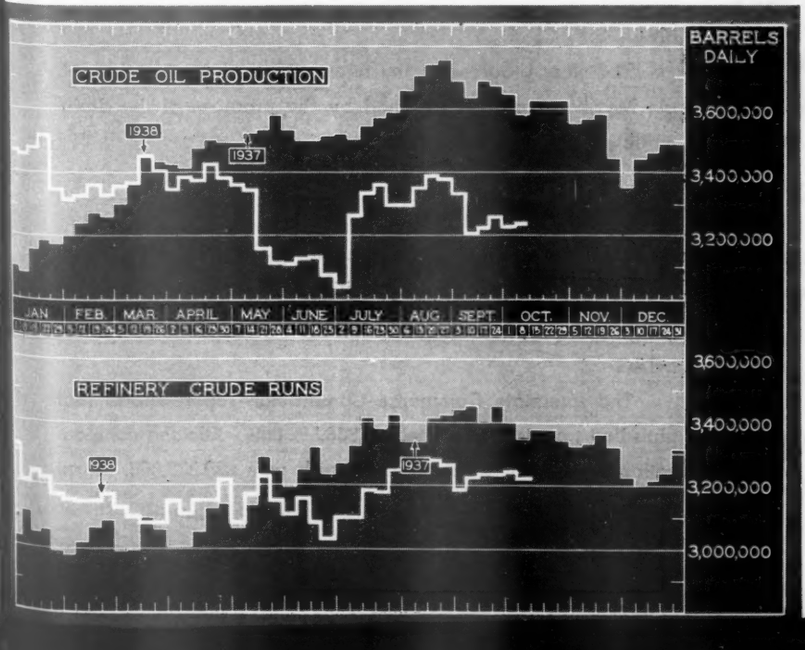
CRUDE PRODUCTION *3,240,025 barrels daily average—up 2,065. One year ago 3,589,582 barrels.*

CRUDE STOCKS *280,278,000 barrels as of September 24—down 667,000. One year ago 307,974,000 barrels.*

GASOLINE STOCKS *68,706,000 barrels as of October 8—up 104,000. One year ago 65,532,000 barrels.*

GAS AND FUEL OIL STOCKS *152,275,000 barrels as of October 8—up 516,000. One year ago 118,442,000 barrels.*

REFINERY RUNS *3,205,000 barrels daily week ending October 8—down 30,000. One year ago 3,350,000 barrels.*



The question of who makes the crude market, the big buyers or the little ones, was still debatable, but in the present situation the first cuts in Oklahoma, North Texas and Kansas were announced by what may be termed the secondary group of buyers, while in Louisiana and Arkansas and in most of the Texas fields major purchasers took the initiative.

The fact that six days elapsed between the major cut in Louisiana and Arkansas and the major cut in Texas, showed the hesitancy of the purchasing companies in making any downward revision in their crude oil postings. Both large and small buyers appear to have held on as long as they could before taking action.

DAILY AVERAGE PRODUCTION FOR WEEK

	Oct. 8, 1938	Bur. Mines Oct. est.	Oct. state allowable	Oct. 1, 1938
Oklahoma City	99,300	.....	.....	95,175
Fitts	36,525	.....	.....	37,725
Remainder of state	314,575	.....	.....	321,150
Total Oklahoma	450,400	523,600	428,000	454,050
East Texas	369,300	.....	.....	369,000
West Texas	197,349	.....	.....	189,750
North Central Texas	100,100	.....	.....	99,850
Texas Panhandle	60,650	.....	.....	68,250
East Central Texas	90,146	.....	.....	89,150
Gulf Coast Texas	326,000	.....	.....	323,898
Southwest Texas	98,598	.....	.....	96,398
Total Texas	1,242,143	1,359,000	1,260,466	1,236,296
North Louisiana	81,570	.....	.....	73,690
Gulf Coast Louisiana	189,100	.....	.....	186,900
Total Louisiana	270,670	248,400	260,470	260,590
California	663,750	619,000	610,000	660,750
Kansas	154,700	163,400	163,400	159,375
Arkansas	55,325	54,100	.....	57,750
Illinois	86,545	51,900	.....	88,086
Michigan	53,602	53,900	.....	50,063
Eastern Fields	90,600	96,500	.....	92,800
New Mexico	103,720	109,200	106,000	105,990
Rocky Mountain area	68,570	87,800	.....	72,210
Total United States	3,240,025	3,366,800	.....	3,237,960

The lowered price schedule for crude may cause reopening of some shut-down refineries provided further cuts in the already too cheap refined product are not made.

Softness pervades most of the refinery market, with the principal product, gasoline, especially weak. The Barnsdall Refining Corporation will close its Barnsdall, Okla., plant October 15 and the Cities Service Oil Company will close its Okmulgee, Okla., plant October 20. Announcements of reductions in crude prices were a cause of further unsteadiness in the refinery market this week. Unseasonably warm weather in various areas has slowed demand for heating oils, but no serious accumulation of stocks has resulted. Natural gasoline was showing greater firmness.

SPARKS FROM THE NEWS

NEEDS OILING

Mid-Continent refiners discover the thing that needs oiling most is their own lubricant market.

PROMPT RESPONSE

Chairman Thompson, suggesting more oil from Texas, asked "Shall we let the store across the street take our business?" He got a speedy answer.

OIL COUNTRY SPAN

Bridge constructed by operators in the K.M.A. field

RATE REGULATION

Dr. Pogue's concept of creative rate regulation gives the gas industry and the regulatory bodies something new and vital to think about.

UNDERSTANDING

The conference of automotive and refinery engineers at Tulsa on common problems should prove of mutual benefit and to the advantage of the owners of motor vehicles.

STILL TOO MUCH

There was no diversion of highway taxes in 14 states in 1937, nine states reduced diversion and two abandoned it. This is the result of public sentiment, but there is still 13.7 per cent diversion from the special purpose which is the sole excuse for these taxes.

DEMONSTRATION

The price cut is taken by old timers as another proof that "enough local conditions will sooner or later make a general situation."

OIL MAGNET

Eight Oklahoma cars, an equal number of Texas cars, three Kansas cars, two from Louisiana, one from Arkansas and one from Kentucky were parked in front of a small Illinois hotel one night recently. The single Illinois auto was lonesome.

REASSURING

Acting Chairman Seavey of the Federal Power Commission told the American Gas Association the commission had no intention of instituting revolutionary changes.

DOESN'T WORK

The theory that a refiner can make twice as much of a product as is needed and still have a good market for it continues its refusal to work.

SNAIL'S PACE

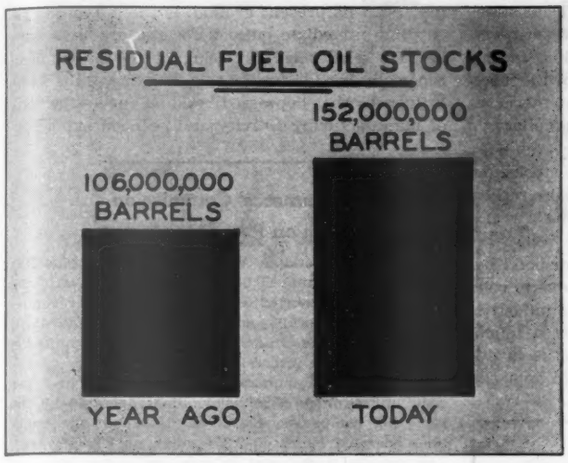
The slow progress of the expropriation litigation through the Mexican courts is matched by the progress of the diplomatic exchanges on the subject.

SINGLE EYE

There's one point on which the coal operators and the miners can always agree, opposition to gas pipe lines.

DRAG

The Interstate Commerce Commission report shows that pipe line taxation amounted to $38,562,000 while the compensation paid labor outside office work was $39,339,000. Earnings paid in excessive taxation limit employment.



INDUSTRY IS AGAIN AT THE CROSSROAD

By H. Stanley Norman

NEW YORK, Oct. 11.—The oil industry is at another of its periodic crossroads. This conclusion, reached after conversations with several of the nation's leading oil company executives, was said to be something that must be evident to practically every individual in the business. In the respect that motor fuel stocks, crude oil stocks, and to a lesser degree light fuel oil stocks, are all in reasonably satisfactory to strong positions, this crisis differs from most of those in the past with which the industry has been forced to contend. Basically, however, there is no distinction between current conditions and those which have caused a collapse of the fundamental crude oil market. There is too much crude oil reaching the market below the actual posted price or below comparative prices prevailing for greater quantities of crude of similar quality.

Weak spots in the crude oil picture have been evident for more than a year, with daily or weekly completions aggravating the sores. To be specific, the weak spots are the Illinois-Indiana territory and the Louisiana-Arkansas area. So far as conditions east of the Mississippi River are concerned, behind the weakness is the lack of an effective conservation law in any of the areas or the complete absence of restraint in any form.

At 280,278,000 bbls., crude oil stocks are at the lowest total touched in 17 years. With the exception of a few companies, stocks of crude oil on hand and in transit are near a level below which sound operating practices will not permit them to drop. One of the largest operating companies in the business has no more than 4,000,000 bbls. of crude oil in storage, which is sufficient only to guard against emergencies which might arise.

There has been considerable speculation as to when those drawing on storage stocks would cease this practice and purchase their full requirements from current production. There are almost as many answers to this question as there are companies in the business. Crude oil stocks are synonymous with money in the bank. Under the economic system of this country a man cannot be compelled to stop drawing funds from the bank so long as his balance permits. This same principle applies to those companies with oil stocks on hand.

The one point regarding storage upon which there is almost universal agreement is that drafts on oil stocks are usually halted soon after the general price structure cracks. It appears evident from investigation that most oil purchasers would not be adverse to storing crude at prices less than those that prevailed.

Under the rigid proration schedules imposed on producers in Texas, Oklahoma, Kansas and New Mexico during the past several months many of the large operating companies, affiliates of equally large refining units, have witnessed deep inroads made in their wholly-owned stocks. Despite the curtailment of refinery operations by a majority of companies, the curtailment of controlled production has been more severe than the reduction in runs to stills. This condition has dictated a greater proportion of crude oil purchases or the alternative of refining stocks in storage.

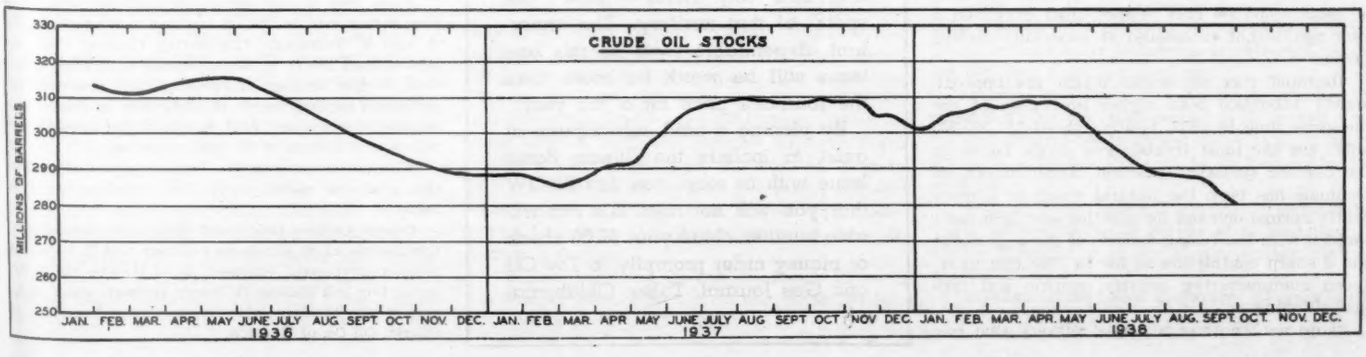
The wholesale market for petroleum products being weak, as it has been for practically a year, throws the weight of attractiveness to the refining of aboveground stocks. In the past year crude stocks have been lowered from 307,974,000 to 280,278,000 bbls., a reduction of 27,696,000 bbls. It is estimated that crude stocks are so held that a comparable reduction could be brought about over another similar period in the event economic conditions make a continuation of this practice attractive.

Only two solutions to the present situation appear. Either the wholesale markets for petroleum products must move upward or the price of crude oil must come down. That the latter alternative has been set in motion is in evidence from several parts of the country. Purchasing companies in Michigan, Illinois, Oklahoma, Louisiana, Arkansas, Texas and southeastern New Mexico have cut prices from 6 to 20 cents per barrel since the first of October. The reductions were more or less general in Louisiana, Arkansas, Texas, southeastern New Mexico, Kansas and Oklahoma. There has been some effort apparent, however, to apply the crude price cuts to areas most responsible for the current conditions.

The competitive nature of crude oil production from Oklahoma and Kansas with that from Illinois and Michigan in the Middle West refining and marketing territory gives conditions in these areas particular significance. For instance, production from Illinois has increased from a daily average of 28,300 bbls. in September, 1937, to a current rate of just under 90,000 bbls. Since the difference of approximately 60,000 bbls. is nearer the Chicago refining and marketing center it naturally has been favored over the more distant and equally expensive production from Oklahoma and Kansas. Added to the disturbance of dislocated markets is the current push of excessive production from Illinois which is seeking and finding outlets below the posted price, throwing it even further out of competitive step with oil produced in Oklahoma and Kansas.

It was estimated in one quarter last week that 200,000 to 300,000 bbls. of current crude oil production is selling below the posted field prices in one form or another. Others interviewed thought these figures might be liberal, but were in agreement that sufficient oil is moving from certain fields, including Illinois, Arkansas, parts of Louisiana and other southwestern territories to place a terrific strain on the entire crude price structure.

Some evidence of the contracting markets in the Mid-Continent and their apparent loss of consumer outlets to Illinois and Michigan was given in announcements last week that two Oklahoma refineries are being temporarily retired to the list of idle plants. Rumors that a third refinery in the Oklahoma territory was to shut down for an indefinite period were not confirmed. Barnsdall Re-



fining Corp. plant at Barnsdall, a refinery of 5,000 bbls. per day capacity, was to be shut down October 15 and Cities Service Oil Co. announced plans to cease operating its Okmulgee plant by October 20. In the case of the Barnsdall decision, a total of 2,170 wells producing about 3,500 bbls. per day in the Osage field was cut adrift from market outlets. Negotiations were started to obtain other pipe line connections for this production with reports current that four buyers had expressed willingness to help in event costs were not prohibitive.

Most New York executives feel that motor fuel stocks are in fairly sound position despite the fact that the total is still about 3,000,000 bbls. higher than at a comparative date in 1937. Hope exists, however, that further liquidation may be accomplished mainly through earlier introduction of new car models and the rate at which automobile plants expect to produce commercial and passenger vehicles in the next few months. Production of automobiles and trucks increased approximately 50 per cent last week, according to statistics from the trade.

Whether improved business will develop with sufficient speed and intensity to lift the wholesale petroleum market is open to conjecture. It is not without significance to note that loadings of revenue freight reached 697,938 cars last week, the biggest total for the year. Particularly encouraging in the situation was that the movement of freight for about a month has shown a gradually rising tendency, so last week's result apparently was not of a temporary nature.

Carloading Gain

While railroads themselves are important consumers of fuel and lubricating oil, the carloading data is probably more significant for the indication given on business in general. With car loadings increasing, it must inevitably follow that manufacturers are producing and shipping more goods and to turn up production means consumption of more fuel and lubricants.

Few expect that motor fuel markets can be materially improved over the coming winter months, although there is the possibility that gasoline may be swept along with the tide on a rising commodity market which appears at hand or developing currently. The fact remains, however, that the nation is now entering a four to six months period of slackened automobile operation and consequently lower gasoline consumption. Most observers anticipate, however, that refinery operations can be held to approximately their present level, still supply the demand for light fuel oils and avoid accumulation of excessive gasoline stocks, providing, of course, consumption of the latter product holds at least 98 per cent of the 1937 market for the remainder of the current year. Since motor fuel consumption slumped so drastically during the last quarter of 1937 it is still possible that 1938 will close with gasoline demand on a par with the preceding year.

On a projection of the current refinery operating rate, the total of nearly 32,000,000 bbls. of gas oil and distillate fuel stocks now on hand, which is about 4,600,000 bbls. higher than prevailed a year ago, is not considered an especially serious factor.

Residual fuel oil stocks which are approximately 46,000,000 bbls. higher now than at the the same time in 1937, totaling about 152,000,000 bbls., are the most troublesome single factor in the current statistical position. Accumulation of residuals has been the natural result of a more nearly normal demand for gasoline and light fuels coupled with increasing exports of those products and a sharp contraction so far in 1938 due to reduced manufacturing activity, marine and railroad shipping.

"I do not know of a single refinery that has made a profit this year," was the significant statement made by one of the large company executives last week. He continued that for a time in the earlier part of the year it was possible for the more efficient plants to break even but that more recently they had not been even swapping dollars.

This condition was advanced as one reason why companies with inexpensive crude oil stocks on hand were drawing so liberally on storage rather than purchasing in the open market from current production.

That the light fuel oil market will respond by an upward movement to the first severe cold weather is confidently expected in the industry. That the residual fuel oil market will be much slower to respond to an expected increase in demand, and domestic motor fuel will hold approximately to its present ground, is the consensus regarding immediate outlook for the products market. The wholesale lubricating oil market has been especially hard hit so far this year due to the same influences that depressed residual fuels—the lack of manufacturing activity and reduced exports.

There's a new

Oil Map of the Illinois Basin

But it's only ONE of many notable features in a special Journal overflowing with practical value—

The ILLINOIS BASIN ISSUE

(published October 27)

The four-color insert map, 34x28 inches in size, locates more than 75 fields in that area and shows pipe line systems, refineries, natural gasoline plants, and a generalized geologic section. It's the latest and most complete map available on this the most active oil territory in the United States.

The Illinois Basin Issue itself will contain numerous major articles on that area's most vital subjects: geology and geophysics; production practices; drilling methods, etc. The Journal's famous Service on New Fields will bring you the salient facts on the Lake Centralia, St. Elmo, and Birk City fields — three "hot spots" of that territory. The important, dependable facts in this one issue will be worth far more than the Journal's price for a full year.

By placing a paid subscription at once, to include the Illinois Basin Issue with its map, you can KNOW that you will not miss this remarkable number. Mail your $6.00 check or money order promptly to The Oil and Gas Journal, Tulsa, Oklahoma.

Interstate Commerce Commission Annual Report on Pipe Lines

Fifty-nine interstate, common carrier oil pipe line companies operating 96,612 miles of pipe lines in the United States reported aggregate operating revenues of $248,645,057 for 1937 and net income of $102,796,361, according to the Interstate Commerce Commission statistical report just released.

There was an increase of 201, or less than 1 per cent, in the miles of gathering lines operated by the reporting companies, 1937 over 1936, but the trunk lines operated increased 2.351 miles, or 4.32 per cent. The reported investment in pipe line carrier property increased from $773,742,828 in 1936 to $802,945,910 in 1937. An increase in operating expenses of only 7.26 per cent was reported. Taxes increased 21.77 per cent.

The decrease of 22.33 per cent in the interest on on long-term debt is explained partly by reduced accruals for Shell Pipe Line Corp., and partly by the fact that Ajax Pipe Line Co., which accrued $472,890 in 1936, did not file a report in 1937 as its property had been acquired by Ajax Pipe Line Corp. on September 1, 1936.

The average number of persons employed during the year by the reporting companies was 23,235 in 1936 and 24,168 in 1937, an increase of 933, or 4.02 per cent. The compensation increased 17.80 per cent. This increase in labor cost was relatively larger than the increase of 7.26 per cent in operating expenses. A large part of the operating expenses consists of depreciation, cost of material and other non-labor items, the pay roll of $45,054,857 being about 45.22 per cent of the total operating expenses, and being in part chargeable to investment. Depreciation, including amortization, charged to operating expenses during 1937 amounted to $29,100,125, compared with $31.519.-244 in 1936, a decrease of 7.68 per cent.

Pipe line companies are subject to the jurisdiction of the Interstate Commerce Commission if they are common carriers engaged in the interstate transportation of oil or other commodity, except water and except natural or artificial gas, by pipe line or partly by pipe line and partly by railroad or by water. Some of the companies filed reports for only part of the calendar year. The number of companies subject to I.C.C. jurisdiction at the close of 1937 was 58 and 52 for 1936. The increase of six, however, is the net result of seven additions and one elimination.

A.I.M.E. Secretary Addresses Texas A. and M. Students

COLLEGE STATION, Tex.—Chester Naramore, secretary of the petroleum division of the American Institute of Mining and Metallurgical Engineers, was first speaker of the year before 150 petroleum engineering and geology students of Texas A. & M. College. Mr. Naramore is well known through the oil fraternity both in this country and abroad, having been engineer, executive and oil operator in the United States, Europe, Asia, Africa, China, and Siberia.

From time to time during the academic year other outstanding men in the oil business will speak to the A. and M. Petroleum Engineering Geology Club. Its new officers are D. B. McCorquodale of Orange, president; Wright Bradley of Palestine, vice president for petroleum engineering; D. H. McLendon, of Pharr, vice president for geology; A. D. Schutz of San Antonio, secretary; S. J. Dwyer, of El Paso, treasurer.

Those accompanying Mr. Naramore to College Station who also spoke to the club members were as follows:

George Corless, Gulf Coast division superintendent, Carl Reistle, chief petroleum engineer, and T. V. Moore, production research engineer, all of Humble Oil & Refining Co.; and William B. Heroy, formerly chief geologist of the Sinclair interests, now vice president of Pilgrim Oil Co. of Houston.

Major Purchasers of Crude Cut Prices in Six States

By JAMES McINTYRE

Reductions in the posted prices of crude oil, which started on September 1 in the eastern fields and spread to Kentucky, Illinois and Michigan in September, reached the Mid-Continent fields on October 5 in Louisiana and Arkansas and were followed on October 11 by general reductions in Texas and southeastern New Mexico and in Oklahoma and Kansas. The Louisiana-Arkansas reductions were posted by Standard Oil Co. of Louisiana, while in Texas the first major company to lower crude prices was Humble Oil & Refining Co. Standard Oil Co. of Indiana lead in the Oklahoma-Kansas reduction.

No surprise was manifested when on October 5 Standard Oil Co. of Louisiana made a general reduction in the prices it pays for crude oil in Louisiana and Arkansas. Refiners have been operating either at a loss or at practically no profit throughout the year because the price of crude was too high when measured by the returns for gasoline. Some refiners had announced that they would close plants rather than to continue operating at a loss. The general oil situation was known to be bad and it was aggravated by the steadily rising production of the Illinois fields, which have already passed the 90,000-bbl. mark in daily production in a period when Mid-Continent and Gulf Coast fields were being curtailed.

But in the face of the generally weak situation almost a week passed before the Standard of Louisiana's cuts were met in Texas by Humble Oil & Refining Co. on October 11. The Louisiana-Arkansas reductions amounted to 16 and 17 cents per barrel, but the Texas reductions were not so deep, ranging from 13 to 15 cents. The big East Texas field was given the 15-cent cut by Humble, making its new price $1.10 per barrel, or 25 cents below the price that prevailed for most of September and for a long time before.

Louisiana-Arkansas Cuts

The first move toward a general reduction in the crude market by a major purchaser was made on October 5 when Standard Oil Co. of Louisiana announced a lowered schedule of prices in North Louisiana and Arkansas and in the four Louisiana Coastal pools in which it buys oil. The company made a 17-cent cut in the prices of all grades of crude in Homer, Caddo, Bunkie, El Dorado, Sabine, Haynesville, De Soto and Cotton Valley effective on October 5, making crude below 25 gravity 73 cents; 25 gravity, 75 cents, and adding 2 cents for each degree up to and including 40 gravity and above at $1.05. At the same time it placed the Rodessa field in the general North Louisiana and Arkansas gravity scale as above given, which was a 20-cent reduction from the prices Rodessa had been receiving. In the Buckner, Magnolia and Village fields in Columbia County, Arkansas, Standard quoted below 25 gravity 66 cents, 25 gravity 68 cents, adding 2 cents for each degree upward to 40 degrees and over at 98 cents. Heavy Smackover crude was cut to 73 cents, a 2-cent reduction. Louisiana Coastal crude in the Roanoke, North Crowley, Darrow and Choctaw pools was cut 16 cents per barrel on each grade, the new prices being for below 21 gravity 74 cents, 21 gravity 77 cents, adding 3 cents for each degree upward to and including 26-26.9 degrees and then adding 2 cents for each degree up to and including 40 degrees and over at $1.20.

The new prices announced by Standard will be figured on a 100 per cent tank-table basis, instead of the former 99 per cent basis. Temperature adjustments and deductions for basic sediment and water will be made in the usual manner.

Standard's Statement

Accompanying the announcement of the new prices was a statement by M. J. Rathbone, president of the company, which said:

"For some months, crude, in increasing amount, has been sold by others at prices substantially below our posting for crudes of like quality purchased in the same general territory. During the month of September as much as 25 per cent of the crude in North Louisiana and southern Arkansas moved at prices from 15 cents to 20 cents per barrel below our posted prices. The Schuler, Lisbon and Jennings fields alone have been producing 50,000 to 60,000 bbls. per day of crude, almost all of which has been moving at prices below our schedules. In addition there are a number of other fields in this area in which crude is being sold at prices materially under our postings. The products from these lower-priced crudes are moving into direct competition with the products from our refinery, and we have, therefore, been forced to revise our crude oil postings downward."

Following the announcement of the Standard Oil Co. of Louisiana's price reduction, the Lion Oil Refining Co. of El Dorado, Ark., met the cut with a new schedule for Arkansas. The El Dorado field, including the west and south pools; Champagnolle (or Rainbow), and the light Morgan sand production in Schuler were placed on a gravity basis with a bottom price of 73 cents and a top price of $1.05. The Lion company placed the Jones sand and Reynolds lime production in the Schuler field (the former accounting for the greater part of the production of the field), on a gravity basis with a bottom price of 66 cents for below 25 gravity and a top of 98 cents for 40 gravity and over, thus meeting the Standard's prices in the neighboring Columbia County pools of Village, Magnolia and Buckner. In addition the Lion company posted flat prices as follows: Smackover, light and heavy, 73 cents and Snow Hill, 85 cents. Lion pays 90 per cent of the Smackover price for Urbana, Arkansas, crude under a three-year contract with producers in that Union County pool, but does not post it. Lion's prices will be on a 98 per cent tank-table basis, instead of 100 per cent, as posted by Standard of Louisiana. All Lion prices were made effective on October 5.

Phillips Petroleum Co. met the Lion's prices in the Schuler field on October 5 and posted Smackover heavy crude at 73 cents.

Caddo Crude Oil Purchasing Co. (Grogan Oil Co. subsidiary) met the Standard's schedule in the pools in which both purchase.

Stanolind Oil & Gas Co. met the Standard of Louisiana prices in Pine Island, Caddo Parish, Louisiana, and applied the same prices to its purchases in Marion County, eastern Texas, adopting also the 100 per cent tank-table basis.

On October 6 Kanotex Refining Co. of Arkansas City, Kans., which buys about 5,000 bbls. of crude in Kansas and about 500 bbls. in Kay County, Oklahoma, made a deep cut, starting at 34-34.9 degrees at 88 cents and adding 2 cents for each degree up to and including 40 degrees and over at $1 per barrel. This was a 30-cent slash from the posted prices on that date in Kansas.

Omar Refining Co., which buys oil in the Lamont pool in Grant County, Oklahoma, made a 15-cent cut in the price of 40-gravity oil, its new price being $1.15 per barrel, effective on October 6.

Humble's Lowered Prices

A general cut in crude prices effective 7 a.m. Tuesday, October 11, was made by Humble Oil & Refining Co. as follows:

West Central Texas, 24 gravity, 71 cents, with a 2-cent differential for each degree making 45 gravity and above $1.13. Gravity scale in this district was extended from 40 to 45 degrees.

East Central Texas, 23 gravity, 78 cents, with 2-cent differential to 40 and above at $1.12, a 15-cent cut.

Gray County, 28 gravity, 72 cents, with a 2-cent differential and with the gravity scale extended from 40 to 45 degrees, making the top price $1.06, a 12-cent cut.

Carson-Hutchinson counties, 28 gravity, 67 cents, with a 2-cent differential and with the gravity scale extended from 40 to 45 degrees, making the top price $1.01, a 12-cent cut.

Tomball, Raccoon Bend, deep sand, and Satsuma, 22 gravity, 95 cents, with 2-cent differential, making 45 and above $1.41, gravity scale extended from 40 to 45 degrees.

Conroe was taken from gravity scale and given flat price of $1.27.

West Texas and New Mexico, below 20 gravity, 53 cents, with 2-cent differential to 40 and above at 95 cents, a 13-cent cut.

Texas Gulf Coast, below 20 gravity, 79 cents, with a 3-cent differential to 26 gravity at $1, then 2-cent differential to 40 degrees and above, making the top price $1.28, a 13-cent cut.

Anahuac and Dickinson, below 20 gravity, 74 cents, with a 3-cent differential to 26 gravity and a 2-cent differential to 45 and above at $1.33, gravity scale extended from 40 to 45 degrees, a 13-cent cut.

Refugio, Texas, below 20 gravity, 79 cents, with 3-cent differential to 26 gravity at $1, and then 2-cent differential to 45 and above, making the top price $1.38.

Mirando crude, below 20 gravity, 74 cents, with

(Continued on Page 42)

Asks Creative Rate Regulation for the Natural Gas Industry

By JOSEPH E POGUE
Vice President, Chase National Bank, New York*

In a resource industry much attention is attracted to periodic estimates of proven reserves, without too close notice of the qualification that such measures can quantitatively take into account only the portions that have been blocked out and hence reduced to more or less exact knowledge. As in the case of oil, so with natural gas, the conventionally indicated reserve is in the nature of a working inventory, constantly affected by depletion, on the one hand, and accretions from new discoveries, on the other.

The ultimate reserve is an entirely different matter and cannot be scientifically measured or even approximately predicted.

Gas Reserves

The known proven reserves of natural gas in the United States are believed by the best authorities to be in the neighborhood of 60,000,000,000,000 to 75,000,000,000,000 feet, or, say, 25 to 30 years' supply at the current rate of consumption. Even with this back-log, however, the continued discovery of new reserves is a fundamental requirement of the industry. That such extensions of the known supply are possible for a sustained period is beyond reasonable question, for even were the incentive lacking in respect to gas, the active exploration for petroleum is bound to continue to uncover enormous gas potentialities, particularly in light of the fact that the penetration of greater and greater depths in the development of oil fields reveals increasing proportion of gas by reason of the high pressures prevailing and the tendency of the lighter hydrocarbons to occur at greater depths. The practical problem, accordingly, for some time to come is more likely to be one of developing markets for new supplies than that of creating additional stimuli for search, although there are conditions under which the supply factors for both oil and gas might be retarded. But not merely is there a problem of inducing proper employment of capital to maintain a dynamic balance between supply and demand in an over-all sense, but a fitting together of the various segments of a shifting supply, following the scene of oil exploration, will tax the talents of the ingenious.

In the course of its evolution, the natural gas industry has come under the influence of an increasing degree of regulation on the part of the representatives of society. There are now three phases of regulation: that of state utility commissions in respect to the terms of distribution to the domestic consumer; that of state conservation bodies in respect to the manner in which natural gas is produced; and, finally, that of the Federal Power Commission as regards the movement of the commodity in interstate commerce.

Running through these three phases of regulation there may be seen to be but two types or principles: regulation for the purpose of preventing waste, confined as a practical matter to the extraction of the commodity from the ground; and regulation of rates, for the purpose of protecting the interests of the consumer against unreasonable burdens, in the absence of fully competitive conditions that could be counted upon to provide these safeguards automatically.

The greatest deficiency in the practice of rate regulation is the absence of a broad concept of the industry as an economic organism, whose interests as a whole should be harmonized with those of the consumer, the investor, the worker, and the management; for lacking this coordination, or if the requirements of the industry as a whole are violated, then the long-term interests of those immediately concerned are not best served, growth is interfered with, and the potential standard of living is lowered.

Theory and Practice

It is the theory and practice of what might be termed protective rate regulation that a fair rate of return upon the fair value of the property employed be allowed, but these terms have no precise meaning, and the manner in which "fair rate of return" is defined and "fair value of property" is measured leaves considerable latitude for wide divergence in rulings. The profitability of the industry is the product of the two factors, and varies according to the allowance fixed for each, which in turn depends upon the principles adopted in arriving at the rate as well as the rate base. The natural gas industry is a mass production activity of integrated character and is itself interested in reducing the cost of its service to the consumer in order to enlarge its business. The requirements of growth and needs for technological progress, however, demand steady accretions of new capital and the stimulus of a return adequate to this end is essential. Utility rates some years ago were in general such as to give a rate of return of 7 to 8 per cent; now the range is 6 to 7 per cent. Recent court decisions affecting the rate of return for the natural gas industry center around 6½ per cent.

It is conventionally conceived that such a rate of return is composed of pure interest, compensation for risk, and a reward for efficiency, although the last element is not universally accepted as valid and segregation of the total rate into its several components is not usually specified. A broader and more productive formula might be regarded as one embracing the following three elements: pure interest, compensation for risk, and residual element essential to sustain a dynamic quality in the industry. This residual element is not needed in decadent industries, but for such an active industry as that under consideration the advantages of originating and retaining for reinvestment a substantial part of its capital requirements are important, for if the extractive industries do not create capital on balance, must not the needed capital be derived from industries less vigorous, or be provided from inflationary processes, or else go lacking?

One may venture, therefore, to bring forward the concept of creative rate regulation, especially at this juncture when the natural gas industry faces a broader and more pervasive type of rate regulation than it has heretofore encountered. If rate regulation is a substitute for competition, and if furthermore a rate structure with its attendant rigidity must operate in lieu of a flexible system of market prices, then care must be taken that the functional nature of prices shall not be subordinated to the immediately desired objectives, which usually are concerned with persons rather than abstract conceptions. Rate regulation is a form of price-fixing under official sanction and it is notorious that price-fixing schemes suffer from their inability or disinclination to take into consideration the economic forces set up by the prices established. Price-fixing tends to establish prices that are too high and hence too stimulating to expansion; contrariwise, rate-fixing tends to set prices that are too low, or else threatens to do so, and hence is apt to create conditions hostile to proper expansion and growth. The motives in the two instances are different, and yet in a deeper sense not unlike—either uneconomic-mindedness or a willingness to sacrifice the long-term for a short-time advantage.

If the creative element is to be brought into the rate making formula, then one must be concerned with a rate that will: (a) tend to further the conservation of the resource, (b) stimulate new technology and its application, (c) further the growth of the industry, by enlarging consumption and attracting or creating the requisite capital for expansion, and (d) introduce an element of flexibility, or in lieu thereof a factor of safety, in order to maintain resiliency in the business cycle—in short, a rate functionally sound.

Concluding Observations

We are living in a period when profound social forces are at work and the whole economy is in a phase of rapid flux. Considerations in respect to the distribution of wealth are in the forefront of all public discussions, while the methods of creating wealth are relegated to second place or taken for granted. The great resource industries are wealth-creating activities, for they bring to the service of mankind in usable form the products of nature which are worthless if not vitalized into action by aggregates of technology, capital, and man-power. Throughout this paper runs the theme of treating an industry as a growing, living, economic organism engaged in doing a job. Of course there are flaws, the need for "reforms" is clearly admitted; but vital industries are constantly engaged in perfecting their activities on all fronts: they have to, else they go backward. It is an important fact that an industry is greater than the sum of its corporate parts, just as the human organism is something more than the aggregate of the chemical elements that compose its body. There is a plus-over part that acts as a spark or catalytic agent and this element is the constituent of greatest value to society.

*Abstracted from address on "Opportunities and Responsibilities of the Natural Gas Industry" before American Gas Association, October 10-13.

Prominent at the San Antonio meeting of the Petroleum Division, A.I.M.E.—Standing: Ed L. Porch, Jr., consulting geologist, San Antonio, chairman of local committee; Dr. R. L. Huntington, University of Oklahoma, vice chairman of the Petroleum Division in charge of engineering research; Dr. Donald L. Katz, University of Michigan; Prof. F. B. Plummer, University of Texas; Chester Naramore (back), newly appointed assistant secretary of A.I.M.E. in charge of petroleum and coal; Paul Weaver, chief geophysicist, Gulf Oil Corp., Houston; C. V. Millikin, chief engineer, Amerada Petroleum Corp., Tulsa, chairman nominating committee; seated: E. J. Kennedy, Jr., assistant to secretary; George B. Corless, superintendent Gulf Coast Division, Humble Oil & Refining Co., chairman Petroleum Division; Benjamin C. Craft, University of Louisiana, secretary-treasurer, Petroleum Division; Charles A. Warner, Houston Oil Co., chairman Gulf Coast Section; E. A. Stephenson, University of Kansas, chairman of committee on papers and programs

DISTILLATE WELLS A.I.M.E. PROBLEM

By Neil Williams

SAN ANTONIO, Tex., Oct. 8.—The increasing development of gas-distillate wells and fields, incident to deeper drilling, particularly on the Gulf Coast, has been giving operators growing concern. Special interest, therefore, attached to the study of the behavior of hydrocarbon mixtures under conditions of higher pressures and temperatures, which occupied the Thursday afternoon session of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers at its autumn meeting here.

The problems involved in the production of such reserves, in which the marketable hydrocarbon materials often appear in the gaseous rather than liquid form, were discussed in papers presented, which included "Physical Properties of Hydrocarbons and Their Mixtures," by E. R. Gilliland, R. V. Lukes and H. W. Scheeline, Massachusetts Institute of Technology; "Behavior of Mixtures of Hydrocarbons Near the Critical Region," by Earl S. Hill and R. F. Nielson, Stanolind Oil & Gas Co.; "Significance of the Critical Phenomena in Oil and Gas Production," by S. L. Katz and C. C. Singleterry, University of Michigan, and "Developments and Production Problems in High-Pressure Distillate Pools," by E. V. Foran of San Antonio, consulting engineer, Parker, Knode, Foran & Boatright.

The first three papers dealt largely with laboratory research which is being done in the study of the behavior of hydrocarbons under high pressures and temperatures. Particular attention was paid to the phenomena of retrograde condensation, peculiar to the high-pressure range, in which condensate is formed upon the isothermal reduction, rather than the increase of pressure. These phenomena, it was stressed, are an important factor to be considered in the recovery of distillate or condensate from many of the newer reserves.

Mr. Foran, in his presentation, discussed field conditions of gas-distillate production. As one phase of the problem of producing such fields, he warned operators against close spacing, pointing out that only by wide spacing could the greatest ultimate recovery be obtained, and production of such fields be made profitable. He expressed the opinion that spacing as wide, if not wider, as followed in the development of some dry gas fields would provide adequate drainage with spacing of one well to as much as 160 acres or more being desirable. He estimated the recovery of this type of production at from 40 to 150 bbls. per acre-foot, and as sands from which this production is obtained generally are only a few feet thick, one well to 10 or 20 acres, or even greater acreage in some instances, is not economically possible, he stated. Wherever possible, he said, unitization and pooling of acreage should be undertaken for the development of such fields.

Recycling of stripped gas as a means of effecting the maximum recovery of fluid and conservation of the gas was recommended by Mr. Foran, although, he said, various factors must be taken into consideration to insure satisfactory operations. Mr. Foran discussed in detail reservoir conditions and pressures as they affect completion and production practices. He stressed the fact that distillate wells are entirely different from oil wells or gas wells, and cannot be completed or operated the same. Care must be taken in the production of these wells that differential of pressure at the bottom of the hole is not so great as to cause precipitation of condensate in the bottom of the hole because under the existing reservoir conditions, he said, this might never be retrieved.

E. A. Stephenson, University of Kansas, presided at the Thursday afternoon session as chairman, with C. E. Reistle, Jr., associate chairman.

Methods for more efficient production of oil and gas wells and obtaining the greatest ultimate recovery from reservoirs in the light of conditions and behavior of fields of tomorrow occupied the attention of the Petroleum Division during the three-day meeting, October 5 to 7. Significant was the fact, as one speaker put it, the program was designed not to give an accounting of what had been done, but rather to foresee future problems and be prepared to handle them as they arise.

Attendance totaled more than 350, with an actual registration of 316, bringing together not only members of the institute but also others from all parts of the country concerned with the

problems of drilling and production of oil and gas. The program was devoted entirely to presentation of technical and semitechnical papers and discussion, the only diversion for the group as a whole being the banquet for members and guests Thursday night.

The opening session Wednesday morning dealt exclusively with the subject of cement and subsurface cementing practices. Characteristics of various types of cement, proper methods and use of cement to obtain the best results were discussed. The subject was deemed especially important at this time because, as it was stated, the oil industry is spending more than $50,000,000 a year in oil-well cementing operations in the Mid-Continent fields alone, and when this amount is involved in a single phase of field development, "executives responsible for this development work are entitled to inquire whether their respective operating departments are securing the ultimate in satisfactory results in return for the money spent."

George M. Cannon, Humble Oil & Refining Co., Houston, and J. A. Barnes, Trinity Portland Cement Co., Longview, Tex., served as chairman and associate chairman, respectively, at that session. Papers presented were: "Characteristics Common to Various Types of Cement and How to Use These Cements for Best Results in Oil Field Work," by I. F. Bingham, Universal Atlas Cement Co., Waco, Tex.; "Sulfate-Resisting Cements," by Svend Rordam, director of research, and Cedric Wilson, research engineer, Trinity Portland Cement Co., Houston, Tex., and "Squeezing Cement Against Permeable Formations," by C. P. Parsons, vice president, Halliburton Oil Well Cementing Co., Duncan, Okla.

Use of Cements

Mr. Bingham claimed that oil-well cements had progressed far in advance of the utilization by the industry to secure the most from these cements, and that future improvements in oil-well cementing results must come largely through intelligent choice and proper use of cements available. He expressed the opinion that operators are wasting time in the periods now allowed for cement setting, pointing out that cement in place back of casing will develop a high percentage of its compressive strength within the first 48 hours, and as this strength is greatly in excess of requirements, there is "insufficient reason for the enforced three-day period required to wait on cement to harden." Considering there are 25,000 wells drilled each year in the United States, and it costs an operator, in idle rig time, $200 a day per rig to wait on cement, the industry could save, he said, $5,000,000 yearly by reducing "W.O.C." one day per job.

The paper by Mr. Rordam and Mr. Wilson analyzed the work being done to develop cements capable of resisting the destructive action of corrosive waters. Much progress has been made, they stated.

In the paper by Mr. Parsons, who told of the increasing application of squeeze-cementing for correction of high gas-oil or water conditions in well completion, questions were raised why the cement does not shut off the oil and where the excess cement goes that is pumped into the hole during the cementing operations. He pointed out that frequently the volume of cement slurry squeezed is many times greater than the theoretical capacity of the hole, but that in tests that had been made of passage of cement slurries through sand under pressure, it was indicated that only in the case of very permeable sands did any cement particles enter the pores of sand formations in their original state. He expressed the belief that there is an erosive or disintegrating action in water and free gas sands, not present to such an extent in oil sand, resulting in the creating of spaces into which the cement goes. Additional space might be formed, he theorized, in sands carrying water or free gas by compaction or movement that would not be present in oil sand due to the incompressibility of oil. Further space might be created, he continued, by slight lifting or arching of the formation by pressure of the squeeze.

Reservoir Formations

The Wednesday afternoon session dealt largely with the physical characteristics of reservoir formations and factors governing the flow of oil, water, and gas. Prof. F. B. Plummer, University of Texas, was chairman of this session, with W. E. Winn, Sun Oil Co., Dallas, Tex., associate chairman.

The papers discussed laboratory and research work which has been done on their respective subjects and included: "The Surface Chemistry of Clays and Shales," by Dr. Allen D. Garrison, Rice Institute, Houston; "The Viscosity Characteristics of Clays," by G. Broughton and R. S. Hand, Massachusetts Institute of Technology; "Surface and Interfacial Tensions of Oil-Water Systems in Texas Oil Sands," by H. K. Livingston, Shell Research Fellow, University of Texas, Austin; "The Interfacial Tension Between Reservoir Oil and Water," by Claude R. Hocott, research engineer, Humble Oil & Refining Co.; "Flow of Oil-Water Mixtures Through Unconsolidated Sands," by M. C. Leverett, Massachusetts Institute of Technology, and "Influence of Oil Flow on Water Content of Sands," by Nico Van Wingen, University of California, Pasadena.

Methods for determination of physical characteristics of oil and gas sands for the evaluation of oil and gas reserves received attention at the Thursday morning session, with Paul Weaver, Gulf Oil Corp., Houston, chairman, and Dr. R. L. Huntington, University of Oklahoma, Norman, associate chairman.

In the opening paper, Albert B. Stevens, Agricultural and Mechanical College, of Texas, College Station, described a new porosimeter which has been developed for the determination of porosity by the gas expansion method. A new method for determining the water content of sands was described in a paper by H. G. Botset, Gulf Research & Development Co., Pittsburgh, Pa. A paper by Howard C. Pyle and John E. Sherborne, Union Oil Co., of Los Angeles and Compton, respectively, on application of core analysis methods to sands of flush fields, also received considerable attention.

Core Saturation

In a paper on "The Effect of Pressure Reduction Upon Core Saturation," by H. G. Botset and M. Muskat, Gulf Research & Development Co., Pittsburgh, Pa., the authors explained that any information to increase accuracy of knowledge of conditions prevailing in petroleum reservoirs should be of direct value in determination of proper operating technique as well as in estimation of reserves and ultimate recovery. Pointing out that the information is obtainable by studies of rocks and their content, they stated the chief problem is to get the core to the surface in such manner that the original fluid content is undisturbed.

The paper explained the procedure being followed to correlate the state of the core at the surface with conditions at the time drilled, and determination, if possible, of any relationship between saturation at the surface with the original fluid content. In this work many variables, including porosity, permeability, nature of liquid and gas saturation, pressure, and rate of pressure reduction, are considered.

Some applications of core analyses in oil field development were discussed by William A. Horner and James A. Lewis, Core Laboratories, Inc., Dallas, Tex.

Among papers at Friday morning's session was one by W. A. Davis, Texas Co. of California, on "The Application of Gravel-Packing to Oil Wells in California." As gravel-packing is just being introduced to the Gulf Coast in an attempt to control fine sand conditions experienced in several of the newer districts, the subject was of particular interest to operators of the latter district.

Mr. Davis described the practice followed in California, where the application of gravel-packing to oil wells was developed. He stated that, so far, the application had been largely limited to pumpers of less than 5,000 feet in depth, but that satisfactory results had been obtained in sand control and minimized lost time due to pulling jobs.

P. E. Fitzgerald, of Dowell, Inc., in his paper on "New Developments in the Chemical Treatment of Wells," told of the work being done in certain Kansas fields to control water by a new chemical which is pumped into the well instead of cement.

A paper on the "Effects of Acid Treatment Upon the Ultimate Recovery From Some Limestone Fields in Kansas," was presented by R. E. Heithecker, U. S. Bureau of Mines. Mr. Heithecker stated very definite benefits had been derived from acid treatment. Acidizing practices and results in certain Kansas fields also were discussed by L. C. Morgan, consulting engineer, Wichita, Kans., at the Friday afternoon session.

Air-Water Mixtures

Another of the interesting features Friday morning was an illustrated study of the "Flow of Air-Water Mixtures in a Vertical Pipe," by Dr. R. L. Huntington and Sylvan Cromer, University of Oklahoma, Norman.

On Friday afternoon's closing session, papers, in addition to the one by Mr. Morgan, previously mentioned, included "Fluid Level Determination With the Echo-Meter," by J. J. Jacosky, International Geophysics, Inc.; "Geophysical Possibilities of Soil Analysis," by Mitchell Tucker, Geological Scientific Service Co., Fort Worth, and "The Development of Decline Curve Analysis by Valuation Classes at University of Oklahoma," by H. E. Gross of the university.

Mr. Tucker explained that geochemistry as applied to the search for oil and gas deposits does not attempt to solve all the problems incident to the search for new oil fields, nor does it supplant any other exploratory tool. However, it has become established as a valuble aid, and although it has its limitations, it has some very definite applications. This science, he continued, provides additional means of detecting the position of petroleum deposits and used in conjunction with geophysical and geological exploration helps to reduce unnecessary drilling in wildcatting and development programs.

Presiding at Friday morning's program were Harold Vance of Texas A. & M. College as chairman, and W. A. Alexander, Shell Petroleum Corp., Iowa, La., and E. P. Hayes, Texas Co., Houston, as associate chairmen. At Friday afternoon's session M. Albertson, Shell Petroleum Corp., Houston, was chairman, and H. H. Power, University of Texas, associate chairman.

Among those taking part in the sessions were E. DeGolyer, serving as personal representative of D. C. Jackling, president of the A.I.M.E. Mr. DeGolyer was one of the principal speakers at the banquet Thursday night, where, informally, he traced the growth and development of the Petroleum Division. At the banquet special recognition was accorded E. J. Kennedy, Jr., assistant to the secretary, and E. A. Stephenson, University of Kansas, for their many years of active service and leadership in the Petroleum Division. Both received watches.

S.A.E. and Refinery Engineers Discuss Common Problems

By W. T. ZIEGENHAIN

Frank and rather conclusive discussion marked the two-day midyear meeting of the Fuel and Lubricants Division of the Society of Automotive Engineers at Tulsa. Since refinery engineers and automotive engineers are faced with common problems it is natural means for discussion be provided. The S.A.E. meetings provide this and account for the diversity of subjects appearing on the program.

B. E. Sibley of Continental Oil Co., vice president of the Fuels and Lubricants Division and director of the meeting, commented upon the need for better understanding and called attention to the opportunity for discussion to follow each paper. One of the subjects to occasion unusual discussion was that by J. V. Brazier of the Barnsdall Oil Co. and Dr. Sidney Born of the University of Tulsa. This was occasioned principally by the statement:

"In comparing oils made from crudes of different origin, it is our belief that oils made in the conventional manner are more likely to retain the natural stability characteristics of the crude than are the solvent extracted oils. Therefore, the Mid-Continent and Pennsylvania oils referred to in this paper are not solvent extracted products.

"Due to economic reasons and the adaptability of solvent refining to any grade of lubricating distillate or residual stock, considerable quantities of lubricating oils are made from all types of crude by this method. However, it is reasonable to assume that the quality of paraffin oils made by selective solvent methods is more dependent on the method and degree of solvent refining than on the characteristics of the crude used.

"Service requirements have brought about some startling developments in the art of lubrication, and as very little is known at present concerning the chemistry of lubricating oils, it is not unlikely that further research along this line will place new values on certain properties of lubricants that may alter our entire conception of the subject."

Another paper, involving engine lubrication also, and one which was unusually well received, was read by W. R. Ransaur of Young Radiator Co. This discussed the need for engine cooling as a means for properly lubricating the engine. The paper stated:

"The need for oil-temperature control for engines depends upon whether the oil is too cold or too hot for satisfactory lubrication. Unsatisfactory lubrication results in excessive wear, corrosion, or failure of bearings and moving parts.

"Oil which is too cold is likely to cause:

1. Inadequate circulation resulting in wear or scuffing.
2. Excessive oil dilution from water vapor and consequent emulsification of the oil.
3. Freezing of the oil pump.

"Oil which is too hot may result in:

1. Excessive oil consumption due to too much oil throw-off from the bearings.
2. Bearing failures due to overheating or corrosion.
3. Oxidation and acidity of oil.
4. Ring-sticking troubles.

"Engines which operate reliably without the above troubles obviously do not need an oil heat transfer device, and the adoption of such a unit would be superfluous. Changes in engine design which appear to eliminate the necessity for oil-temperature control on the lower horsepower engines are:

1. Water jackets extending lower on the barrel.
2. Improved bearing design and manufacture.
3. Stiffer crankshafts.
4. Reduced weight of reciprocating parts.
5. Greatly improved piston-ring design.
6. Operation with lower viscosity oils.

"Satisfactory methods of oil-temperature control may be obtained with either air-type or water-type coolers. The type of unit to use depends upon the requirements of temperatures to be maintained. If oil temperatures are desired below the water temperature, obviously the air-type cooler must be used. For operation of 20° above water temperature the water-type cooler may be used.

"Through the control of oil temperatures with equipment that may be developed, evolved, and used, it is believed that longer life can be given to certain parts, which at the present time have to be replaced. It is believed that more certainty of operation can be procured and troubles eliminated that now are known to occur.

"This work may be accomplished through the cooperative effort of the metallurgist, engine manufacturer, lubrication engineer, and manufacturer of heat-transfer apparatus. If this may be developed to a satisfactory conclusion, it is felt that the purpose of this paper has been accomplished."

Transfering attention to the general subject of car performance as applied to oil company work and on fleets of cars maintained by oil companies, a comprehensive paper was presented by G. L. Wheatley, superintendent of motor transport for Cities Service Oil Co. Contrary to statements that oil and fuel quality were of prime concern, Mr. Wheatley said:

"Perhaps the biggest single maintenance problem is that of procuring experienced, well informed mechanics and supervisors who are qualified to service the various makes and types of automotive equipment used in oil field operations.

"Generally speaking there is not sufficient current service information made available to oil companies by automotive manufacturers. Due to rapid accumulation of mileage on cars and trucks used in the oil industry, inherent weaknesses of

(Continued on Page 42)

Some of the officers and members who arranged the Tulsa S.A.E. meeting. E. Lowe, C. B. Veal, E. W. Pughe, T. J. Schuetz, B. E. Sibley, W. F. Lowe, Arch Foster, W. B. Ross, D. E. Hamilton and J. V. Brazier

Petroleum Section of Safety Council Meets at Chicago

CHICAGO, Oct. 13.—The Petroleum Section of the National Safety Council which has been meeting here for three days has concluded a series of unusually interesting meetings at the Stevens Hotel.

Under the chairmanship of H. W. Boggess, of Sinclair Prairie Oil Co., papers were read on all phases of oil company safety operations. The refining division was particularly well represented.

"A safety program is not the matter of choice that it might have been two decades ago," said Captain Nichoson, of the Texas Co. "Rather, it becomes a national necessity, and civic performance down through the ages has always remained a duty and not a choice.

"The factual and statistical background of safety in America seems to point to the fact that there is an urgent need for closer cooperation among the numerous units and agencies which have recognized the humanitarian and economic importance of this issue. For many years industry walked alone in the matter of safety, and to the countless millions engaged in the industrial empire it must be a tremendous satisfaction to know that their leaders, prompted by humanitarian instincts, pioneered in what today has become the greatest and most important movement in the world."

In a plea for more general adoption of the principles of safety among the smaller units within the industry, J. E. Mitchell said:

"One of the most hopeless aspects of the independent operators' problem has always been the fact that these operators are, in most instances, not large enough to support their own safety organization and, their systematic, individual education being an absolute necessity, we are faced with the almost impossible task of reaching them. This can be accomplished only in one way and that is by organization.

"The one thing necessary to our getting started on this preliminary work is to find someone in position to underwrite the expense. I have mentioned that it seemed logical for the major companies to give certain types of work to service contractors and in some instances to use contract drillers. Bad accident experiences are reflected by high insurance rates. The cost of insurance is an item which is included in the contract price."

Discussing further the question of safety in production practices, James E. Dyer, of Sun Oil Co., said the foundation of the derrick was the chief concern of drillers and pointed out that the bearing surface required of a foundation varies with the type of soil He said, "Not only does the foundation support the weight of the derrick, but it provides weight to anchor the structure against side-sway caused by high winds."

The speaker charged safety engineers in the petroleum industry with failure to keep step in designing safe equipment, until legislation specified certain safety factors that must be included in every derrick constructed.

Madison Hearing at Chicago May Be After Holidays

MADISON, Wis.—The hearing scheduled October 14 to set a date for retrial of 15 individuals and three oil companies granted new trials by Federal Judge Patrick T. Stone on antitrust conspiracy charges will be held in Chicago instead of Madison. Judge Walter C. Lindley, of Danville, Ill., who has been assigned to preside at the trial because of Judge Stone's crowded calendar, has asked government and defense counsel to meet with him in the Chicago federal building. Probability is seen here that the trial may not proceed until after the holidays.

HOUSTON, Tex.—A motion to dismiss the appeal of O. H. Carlisle, division manager of Gulf Oil Corp., from an order of removal to Madison, Wis., to stand trial will be argued before the United States Circuit Court of Appeals at Atlanta, Ga., on October 11, Assistant United States Attorney George John said.

The motion to dismiss is based on a new federal law which abolishes appeals in cases in which habeas corpus actions are brought to test the validity of orders of removal, Mr. John said.

Production Nominating Committee Is Headed by T. E. Swigart

T. E. Swigart, of Shell Petroleum Corp., Houston, Tex., has been appointed chairman of the American Petroleum Institute Division of Production nominating committee. Under the Institute's uniform plan of divisional organization and procedure, this committee will nominate, at the nineteenth annual meeting, in Chicago, November 14 to 18, the 20 elective members of the general committee of the division to serve for the coming year. Announcement of the appointment was made by George A. Hill, Jr., of Houston Oil Co. of Texas, Houston, Tex., vice president for production.

Membership of the committee follows: P. R. Applegate, New York Transit Co.; L. L. Aubert, Bankline Oil Co., Los Angeles; George S. Bays, Stanolind Oil & Gas Co., Tulsa; A. H. Bell, Continental Oil Co., Los Angeles; E. R. Filley, Texas Co., Houston, Tex.; H. J. Hawley, Standard Oil Co. of California, San Francisco; Harry H. Hill, Standard Oil Co. of New Jersey, New York; A. V. Hoenig, Indian Territory Illuminating Oil Co., Oklahoma City; C. V. Millikan, Amerada Petroleum Corp., Tulsa; R. W. Pack, Sun Pipe Line Co., Beaumont, Tex.; Dewitt T. Ring, Ohio Fuel Gas Co., Columbus; John A. Ritter, Sun Oil Co., Dallas, Tex.; H. M. Stalcup, Skelly Oil Co., Tulsa; and Blaine B. Wescott, Gulf Research & Development Co., Pittsburgh.

Thompson Withholds Approval On Confiscated Oil Sale

AUSTIN, Tex.—Chairman E. O. Thompson of the Railroad Commission withheld approval of tenders for 126,902 bbls. of confiscated oil sold September 28 for 17 cents a barrel, pending a complete check upon the quantity and gravity as specified. The oil is stored in three pits near the plant of Southport Petroleum Co. at Kilgore, purchaser of the oil. The bill of sale itemized the oil as 2,047 bbls. of 17.4 gravity, 97,853 bbls. of 22.6 gravity, and 27,000 bbls. of 23.3 gravity.

Roeser Stresses Importance Of I.P.A.A. Convention

At no time during its existence have more important and far-reaching problems confronted the Independent Petroleum Association of America, which will hold its ninth annual meeting in Tulsa, October 19, 20, and 21, according to President Charles R. Roeser. "The members at this meeting," he said, "will decide how we shall meet and attempt to solve those problems. In charting our course during these times we need the advice and counsel of all independent producers. I believe oil men generally realize the need of cooperation as never before and will attend in large numbers."

The equitable adjustment of the domestic market for all producers; elimination of unnecessary and unprofitable drilling; protection of the domestic producer against import competition; renewal and extension of the Connally hot oil law; and the renewal by the next Congress of the Interstate Oil Compact will be among topics of vital interest to the oil men from all oil-producing states who will gather for the convention, Mr. Roeser declared. Adjustment of taxation problems relating to the petroleum field also will come in for consideration by committees of the association and the delegates.

"The oil industry has done an outstanding job of putting its own house in order and keeping it there. Selfish practices, however, could throw this stabilization out of balance at any moment and we are mustering the strength and the experience of the nation's oil men to prevent such a disturbance and to build firm protection against its possibility," he said.

Donald R. Richberg, former N.R.A. administrator, will speak at the closing banquet, and oil men are looking forward to what he may have to say regarding cooperation between the petroleum business and the Government.

I.C.C. Denies A.P.I. Petition For Separation of Trucks

WASHINGTON, D. C., Oct. 10.—The Interstate Commerce Commission has denied the application of the American Petroleum Institute to separate private trucks from the hearings on its proposed regulations for the transportation of dangerous articles by motor carrier.

The petition, which was joined by the Manufacturing Chemists Association, asked that the question of the need for applying these regulations to private shippers by truck be postponed and consolidated with another case in which the commission is seeking to determine the need for establishing regulations for safety of equipment and qualifications of drivers for privately owned trucks. Hearings on the regulations for shipping dangerous articles open today in Los Angeles and will be continued October 17 in Tulsa and October 26 in Washington.

Texas Ouster Suit Finally Ended by Compromise

AUSTIN, Tex. — An agreed judgment for $450,000 penalties and court costs against the Texas Petroleum Marketers Association ended the state's seven-year-old $17,850,000 penalty and ouster suit against 15 major oil companies and two associations.

Of the 17 defendants, only the Texas Petroleum Marketers Association, the agency through which the state alleged the antitrust law violations were executed in "a code of practices for the marketing of refined petroleum products," was assessed any penalty. The judgment recited: "The court further finds that the state is not entitled to recover anything from any of the other defendants."

The settlement did not require any charter forfeiture or suspension of permits for foreign corporations involved to do business in Texas, as sought originally.

Plans Being Completed for A.P.I. Annual Meeting at Chicago

Plans are being completed for the nineteenth annual meeting of the American Petroleum Institute, November 14 to 18, in the Stevens Hotel, Chicago. Outstanding speakers will appear at the two general sessions to be held Wednesday and Thursday afternoon, November 16 and 17. The first two days, Monday and Tuesday, November 14 and 15, will be given to separate sessions of committees. Group sessions of the divisions of production and refining will be held Thursday morning, November 17, and Friday morning and afternoon, November 18.

The first meeting of the board of directors is scheduled for Tuesday afternoon, November 15. The board of councillors will meet Wednesday morning, November 16, to elect directors, who will be elected at the Wednesday afternoon general session. The annual banquet will be held Thursday night, November 17, in the Grand ball room.

Magnetic Storm

Tucson, Ariz. observatory of the U. S. Coast and Geodetic Survey report a moderate magnetic storm began at midnight October 6 and ended at 8 a.m. October 8—Central Standard Time.

N.P.A. Spring Dates

The thirty-sixth semiannual meeting of the National Petroleum Association will be held April 13 and 14, 1939, at the Hotel Cleveland, Cleveland, Ohio.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Ebb and Flow

The industry has many problems, some of which recur from time to time, but none of them is new.

It is recognized by all concerned that quantities of crude oil have been moving under the posted price.

It is known that conservation has suffered and is suffering because there are states which operate without restraint.

Proration is handicapped because of the absence of adequate well-spacing regulations.

Old markets are being supplied by new sources, creating a competitive situation that called for readjustment.

The Madison prosecution has temporarily defeated every possibility of a program of industry regulation in the refining division.

Serious and fundamental weaknesses are apparent in the Iowa plan of leasing filling stations.

The statistical situation is not as sound as supposed by those who consider only inventories of crude oil in storage. Total stocks of all oils are more than 30,000,000 barrels above last year, including a 43 per cent increase in residual fuel oil stocks.

These and other problems are occupying the minds of oil men in every quarter of the country.

Obviously no one knows the answers to all of these, but they will be solved, one by one, if left to the devices of the men best able to cope with them—the oil men themselves.

To talk of seeking outside regulations in a vain effort to control the natural ebb and flow of business fortune is as dangerous as ever. The industry should never sell its birthright during hysteria over an emergency, real or alleged.

The oil business is a free enterprise. It has never failed the customer. It has been its own worst enemy.

The industry has been exceptionally fortunate since the dawn of the gasoline era in having a constant increase in demand for its principal product, except during the depth of the depression when the decline was trivial compared to that in most industries. Last year it had the largest demand for gasoline on record, which promises to be equalled this year.

But through all that period the industry has had its ups and downs, like any other business. It has had its good periods, and it has had its bad periods when it overreached itself.

These fluctuations should not be forgotten or unexpected. But since the depression people have become impatient for recovery. They cannot bear to think of a check or a temporary setback. The first impulse is to call on the government for help, even some in the oil business, unmindful of what followed a former appeal for federal assistance in solving the problems of the industry.

The delusion that a managed economy is superior to a free economy is particularly untenable where the oil business is concerned because it has been the product of free enterprise from the lease to the filling station tank.

The progress toward stabilization that has been made through the conservation policy proves that we are on the right track. But perfection in any program is humanly impossible and cannot be expected. The best we can do is to hold our gains and seek further improvement.

For the moment there is the consoling thought that this readjustment in crude prices will work itself out quickly as it always has done. It is no new experience. This time continuing high demand for gasoline, and prospects for returning general business activity stimulating the market for fuel oil, our weakest point, encourage hope for speedy recovery.

Programs and Meetings

CHARLES P. McGAHA, president | *AL BUCHANAN, vice president* | *J. C. HUNTER, vice president* | *GEORGE C. GIBBONS, executive vice president* | *EUGENE McELVANEY, treasurer*

Texas Mid-Continent Oil and Gas Association Meeting

What oil means to Texas will be a leading topic during the annual convention of the Texas Mid-Continent Oil and Gas Association, at San Antonio, Thursday and Friday, October 27 and 28.

Charles P. McGaha, of Wichita Falls, president of the Texas association, will present some highly interesting and informative observations concerning Texas oil developments and how the state has fared economically as a direct result. Regional committees comprising 350 members are at present engaged in a big "round-up" of oil operators all over the state, and if their optimism means anything the convention attendance should pass the thousand mark, easily.

Al Buchanan, the association's vice president for Southwest Texas and chairman of the San Antonio committee on arrangements and entertainment, says this year's meeting will be the best in the 19 years of the association's existence. "We are sparing no effort to give Texas oil men the best there is in the way of entertainment," he said.

While the final program has not been released, it is understood that the business sessions will begin Thursday morning, October 27, at 10 a.m., in the Plaza Hotel. The first morning will be devoted to the address of President McGaha and committee reports covering taxation, theft prevention and social security. Thursday afternoon session will feature one of the highlights of the convention, an address by W. Lee O'Daniel, governor-nominee of Texas. Presentation of distinguished service awards will be another feature of the opening day. Two prominent Texas oil men are slated for this honor this year, but their identity has been carefully guarded, because this is one of the surprise events of the annual meeting. On Thursday evening there will be a reception in honor of Governor-nominee W. Lee O'Daniel and other celebrities.

Friday morning business session will feature an address by a nationally prominent speaker, to be announced later. While Friday afternoon will be devoted to the annual handicap golf tournament for men and women attending the convention, there will also be a meeting of Texas oil tax men. George H. Sheppard, state comptroller of public accounts, will be one of the principal speakers.

The main entertainment event, winding up the two-day business sessions, will be the annual banquet, Friday evening, October 28, on the Rainbow Terrace of the St. Anthony Hotel. Golf prizes, including the W. B. Hamilton cup, will be awarded Friday evening to winners of the golf tournament, in which teams from 25 Texas cities are competing. Continuous music for dancing, following the floor show, will be furnished.

Officers of the Texas Mid-Continent Oil and Gas Association are Charles P. McGaha, of Wichita Falls, president; George C. Gibbons, of Dallas, executive vice president; Eugene McElvaney, of Dallas, treasurer; regional vice presidents are, for the Gulf Coast, H. R. Cullen, of Houston; for East Texas, Bryan W. Payne, of Tyler; for East Central Texas, H. R. Stroube, of Corsicana; for North Texas, P. F. Gwynn, of Wichita Falls; for the Panhandle, E. J. Dunigan, Jr., of Pampa; for West Texas, Harry Adams, of Midland; for West Central Texas, J. C. Hunter, of Abilene; for Southwest Texas, Al Buchanan, of San Antonio.

P.D.C. Announces Next Technical Meeting

Petroleum Distillation Corp. on October 17 and 18 will hold its third cooperative technical meeting for discussion, among representatives of the participating companies and its licensees, of practical and theoretical aspects and problems of distillation as applied to the petroleum industry, according to announcement of Dr. T. G. Delbridge, president of the company.

This company is licensor of the distillation patents of the Atlantic Refining Co., Standard of New Jersey, Texas, and Standard of Indiana, its owner companies, and of Gulf, Socony, and Standard of California, its present licensees.

CALENDAR

October

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., Oct. 10-14.

NORTH AMERICAN GASOLINE TAX CONFERENCE, Tulsa, Oct. 10-14.

NATIONAL SAFETY CONGRESS, Chicago, Stevens Hotel, Oct. 10-14.

SOCIETY OF AUTOMOTIVE ENGINEERS, Aircraft Production meeting, Los Angeles, Ambassador Hotel, Oct. 13-15.

MID-CONTINENT OIL AND GAS ASSOCIATION, Louisiana-Arkansas Division, annual membership meeting and annual meeting of executive committee, Shreveport, La., Oct. 14.

NATIONAL STRIPPER WELL ASSOCIATION, Tulsa, Oct. 18.

INDEPENDENT PETROLEUM ASSOCIATION, Tulsa, Oct. 19-21.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals and Petroleum divisions, Los Angeles, Oct. 20-21.

NATIONAL ASSOCIATION OF CREDIT MEN, Petroleum Refiners Division, Indianapolis, Ind., Oct. 24-26.

NATIONAL PETROLEUM ASSOCIATION, Department of Fire and Accident Prevention, Olean, N. Y., Oct. 26.

MID-CONTINENT OIL AND GAS ASSOCIATION, Texas Division, San Antonio, Oct. 27-29.

WESTERN PETROLEUM REFINERS ASSOCIATION, Washington-Youree Hotel, Shreveport, La., Oct. 28.

November

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, Tucson, Ariz., Nov. 1-5.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific Section, Los Angeles, Nov. 3-4.

KANSAS-OKLAHOMA Division, Mid-Continent Oil and Gas Association, Tulsa, Nov. 4.

AMERICAN PETROLEUM INSTITUTE, annual meeting, Chicago, Stevens Hotel, Nov. 14-18.

December

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, Dec. 5-9.

OIL AND GAS ASSOCIATION OF MICHIGAN, annual meeting, Mount Pleasant, Mich., Oct. 7.

February, 1939

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, annual meeting, Oklahoma City, Okla., March 22-24.

April

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 13-14.

STATE CAPITALS

CALIFORNIA

A CONCERTED ATTEMPT TO MAKE CURTAILMENT of crude-oil production in California more effective has been started by the Central Committee of California Oil Producers and Umpire J. R. Pemberton in the hope of restricting production during the month of October as the Central Committee did not make any change in the allowable production.

The general reduction in drilling operations in the hope of enhancing curtailment is bearing fruit by reducing the amount of new production, but even with this assistance the Central Committee has had its hands full in distributing the new production among all fields. Production and demand were approximately in an equilibrium in August, which usually shows the peak demand for the year, but preliminary checks indicate a substantial accumulation in Pacific Coast stocks in September. A further accumulation is anticipated in October unless offshore shipments show a substantial increase.

Although production has at no time been reduced to the prescribed allowable, the situation looks much better than at any time since the first of the year. Earlier in 1938 the Wilmington field was running wild, but this condition has been taken care of by the decision of operators to cut the allowable to a maximum of 400 bbls. daily, and additional curtailment has been effected in the Rosecrans, Lake View section of the Midway-Sunset, and Montebello fields. This, together with strict adherence to curtailment in the Rio Bravo, Ten Section, Greeley, and other prolific fields and the inability of the Torrance field to show increased production, has alleviated conditions, but there is little likelihood of reaching the allowable.

TEXAS

TEXAS RAILROAD COMMISSION October 4 set a daily sweet gas allowable of 50,604,000 feet for the Texas section of Rodessa, a cut of 1,395,000 feet.

THE PLAN FOR FORCING pipe line companies to ratable takings, such as was presented at the recent interstate compact meeting, was expected to be widely discussed at the statewide proration meeting to be held in Austin Saturday, October 15. Charles F. Roeser, who presented the plan on behalf of the Independent Petroleum Association of America, at that time urged that it be incorporated in all proration orders issued by those states with regulatory bodies. (The Oil and Gas Journal, page 23, October 6). The plan would. he thought, result in equalizing the market throughout each state. In view of the number of uncollected wells in K.M.A. and East Texas and the presence of pipe line proration in K.M.A. and some West Texas fields, the plan is expected to arouse considerable discussion.

Whether pipe line companies would accept such a ruling is being questioned by many as it may involve enforcement of ratable purchasing between fields, fields which produce oil of different grades and fields which are geographically remote. Producers who would be forced to share their markets with those less fortunate may also voice protests, complaining that they have gone to the expense and trouble to obtain connections and contracts to sell their production and that it is not their duty to divide this market with producers in other fields. The latter argument against the proposed revision may be the most potent offered, and may prevent the Railroad Commission from seriously considering the new plan.

HEARING ON THE LAROSA field of Refugio County, originally scheduled for September 29, has been postponed by the Railroad Commission until October 13 in order to allow operators more time for preparation of data. At that time evidence will be heard as to whether or not special rules and regulations should be adopted for the prevention of waste of crude oil and natural gas.

KANSAS

THE KANSAS CORPORATION COMMISSION set an arbitrary but temporary maximum potential of 5,000 bbls. of oil daily for wells in the Zenith pool, Stafford County, last week. A hearing will be held at Wichita October 27 to consider methods of measuring potentials of Zenith producers. When a suitable method of determining pool potentials is approved, new potentials will be established and made retroactive to October 1, according to Chairman E. R. Sloan.

Previously, potentials in the pool were fixed by the same physical gauge method now in effect in other Kansas fields. However, the potentials as of October 1 were calculated on the basis of a formula suggested by operators. Under this formula the wells were credited with their actual flow of oil in the last four hours of an eight-hour test, plus an additional amount of oil in proportion to their efficiency in maintaining reservoir pressure, as shown by bottom-hole pressure measurements before and during the test. Potential adjustment to a 24-hour basis then was made. Conservation officials, finding a wide variance in potentials determined by this method, set the temporary arbitrary figure.

PENNSYLVANIA

A MOVE TO CHANGE the oil commission, created to make an investigation of the petroleum industry in Pennsylvania, into an all-legislative commission was started in the senate in the past week.

Senator E. J. Thompson, himself a member of the group, asked that a bill already signed by Governor Earle reappointing the oil commission be amended to provide a five-man investigating body, all appointed from the two houses.

Three would be appointed by the speaker of the house, two by the president pro tem. of the senate. The one house member already named to the commission is Representative Michael C. Chervenak.

It would have the effect of removing the three layman members of the commission reappointed by the governor, Judge Ralph S. Smith of Pittsburgh, chairman; John E. McComb, Venango County oil producer, and William H. Godfrey, Philadelphia distributor.

ARKANSAS

ARKANSAS BOARD OF CONSERVATION amended its special order of September 29, reestablishing the top allowable of 200 bbls. for wells in the Miller County sector of the Rodessa field. Prior to the second order of October 3, the allowable was cut to a top of 100 bbls. daily. The change affects only a few wells which are capable of making over 100 bbls. daily.

The Board of Conservation gave notice of a hearing to be held in El Dorado on October 14 for hearing of evidence for the purpose of determining the allowable for the flush fields of the state during November.

State capitol, Sacramento, California

North American Gasoline Tax Conference Discusses Diesel

The North American Gasoline Tax Conference, which opened its annual meeting at the Mayo Hotel, Tulsa, October 10, found its most interesting problem in the collection of the tax on Diesel fuel now being levied in several states.

Joseph D. Hadley, of the Michigan Tax Administration, and Dixwell L. Pierce, of the California Board of Equalization, led the discussion which was concerned chiefly with some method of distinguishing for tax purposes between gasoline and Diesel fuel used on the highways.

Mr. Hadley mentioned taxation on miles run per year which had been used, and discussed whether higher license charge should be made on tractor units, buses and trucks. Mr. Pierce said that in California there are 509 active permit holders using Diesel fuel for vehicles, of which 334 were major users operating truck or bus fleets. Owners of light Diesel equipment numbered 153 and 22 are using Diesel fuel in smaller quantities.

"Alcohol Blends" was the subject of Arnold R. Daum, of Chicago, secretary of the committee on motor fuels of the American Petroleum Institute.

An acceptable definition of agricultural power alcohol in the United States was given as 99.5 per cent pure anhydrous (or water free) alcohol made from farm crops grown in the continental United States for admixture with gasoline. Ten per cent of alcohol, he said, is the amount usually advocated to be blended with gasoline. He added:

"It should be obvious that if and when alcohol-gasoline is sold in substantial quantities, the oil industry will have to do the job. It alone has the necessary distribution, transportation, and refining facilities, as well as capital. It unfortunately is not equally well understood that the oil industry has no prejudice toward power alcohol per se.

"Its business is to serve the public with the best possible motor fuel at the cheapest price, regardless of its origin, and it will continue to do so whether the fuel served be derived from crude oil, coal, oil shale, producer gas, farm crops or some source not even now thought of. Under present and foreseeable conditions the oil industry with good reason believes gasoline far and ahead the best fuel at the cheapest price. If and when conditions unpredictably alter to make some other fuel the best at the cheapest price, the oil industry voluntarily without coercion will market that fuel, whatever it may consist of.

"Summing up, alcohol-gasoline mixtures are not superior motor fuels for ordinary use. The main technical use reason for putting 10 per cent of alcohol in gasoline is to improve the antiknock qualities of your fuel.'

R. R. McGregor, Shell Petroleum Corp., reading a paper on "Your Worries Are Our Worries," prepared by Carl Barker of the Shell Petroleum Corp., told the delegates that the oil industry is asking only "the opportunity to help in the active formulation of rules and regulations which concern the petroleum industry in the discharge of its tax duty to the public. The permanent adoption of a method of cooperation between us will pay big dividends in effective collection of tax revenue, and thus, in the elimination of a great many of your worries, and ours."

Gasoline tax evasion in states that do not produce oil is working a hardship on oil-producing states, Oklahoma Tax Commissioner C. C. Brown told the conference. He said such evasion ranges from 5 to 25 per cent. Oklahoma, he continued, is supplying other states with notification of shipments of gasoline from Oklahoma in order to facilitate collection of gasoline taxes.

H. P. Leatham, of the tax department of the State of Utah, is president of the conference.

Deep Rock Stockholders Committee Granted Review

WASHINGTON, D. C.—The preferred stockholders committee of Deep Rock Oil Corp. of Tulsa has been granted a review by the U. S. Supreme Court of a decision confirming a plan of reorganization for the company.

The committee's petition was directed against the Standard Gas & Electric Co., holders of the majority of Deep Rock's common stock. The tenth Circuit Court of Appeals confirmed the reorganization plan.

Louisiana-Arkansas Group to Feature Story of Lubricants

While refiners in the Ark-La-Tex area are primarily manufacturers of gasoline and its by-products, and while only a few of them manufacture lubricants, the observation is made, based on experience in the regular monthly technical meetings of this group, that when problems of lubrication come up for discussion there is always exceptional interest. On these occasions it seems that everyone, whether they manufacture lubricants or not, enters more wholeheartedly into the discussion.

In order that Ark-La-Tex refiners may have full opportunity to discuss their lubrication problems, the October meeting of the Ark-La-Tex Division of Western Petroleum Refiners Association will be devoted entirely to this subject. This meeting will be held on Friday, October 14, at the Washington-Youree Hotel, in Shreveport, La., beginning at 4 p.m. The special feature of the meeting will be a paper entitled "Lubrication of Anti-Friction Bearings," by O. L. Maag, lubrication engineer of Timken Roller Bearing Co., Canton, Ohio. An important feature will be the open forum discussion following Mr. Maag's talk.

In his paper, Mr. Maag will deal thoroughly with the problems of lubrication. He will point out that modern industry owes much to lubricants, for it is true indeed that no mechanical operation can continue indefinitely without some form of lubrication. Proper lubrication is one of the essentials required for efficient, economical operation and long life of any type of bearing, regardless of whether it is a plain journal or an antifriction bearing; whether it is in a wheelbarrow or the work roll of the most modern mill.

To tell the story of lubrication Mr. Maag is especially qualified by long service and experience in this field. For the past 15 years he has been connected with Timken Roller Bearing Co. as research chemist and lubrication engineer. On many occasions he has addressed gatherings of national and international scope, and because of his untiring and successful work he has received international recognition as an authority on lubrication.

Officials of the Western Petroleum Refiners Association are elated over the program for the October meeting. They feel that refiners in the Ark-La-Tex area are afforded a real treat in this opportunity to hear Mr. Maag's talk. For this reason it is anticipated that refiners throughout the tri-state area will attend in large numbers the meeting to be held in Shreveport next Friday. In addition to members of W.P.R.A., an invitation to attend this meeting is extended to refiners who are not members and to others in the area interested in lubrication.

Exchange of Permits for Leases On Public Land Required

WASHINGTON, D. C.—Holders of 4,000 two-year oil and gas prospecting permits on approximately 6,000,000 acres of public lands in the West were warned that their right to conduct prospecting operations will terminate on December 31 unless they file applications prior to that date for exchange of the permits for five-year leases as required by the act of Congress passed August 21, 1935, Secretary of the Interior Ickes was advised by Commissioner Fred W. Johnson of the General Land Office. An additional 3,400 prospecting permits will expire by statutory limitation a year later, on December 31, 1939.

These methods for speedy handling of the applications will be worked out at a staff meeting in Salt Lake City, Utah, on October 17, 18 and 19, attended by Lewis A. Hoffman, acting chief of the minerals division of the General Land Office, and the principal clerks from the 22 local land offices in the West.

Under the provisions of the act it is required that the leasing system shall be completely in effect by the end of 1939, and that the present method of handling prospecting activities through the issuance of permits shall be terminated. Each five-year lease will become effective December 31 regardless of the date upon which its issuance is approved. Applicants will be permitted to continue prospecting work after December 31.

Under the program holders of the new leases will not be required to pay rentals to the Government for the first two years of the five-year lease period, unless discovery of oil or gas is made.

W.P.R.A. Technical Meeting In Shreveport, October 28

The second of the 1938 technical meetings arranged by the manufacturing committee of the Western Petroleum Refiners Association will be held at the Washington-Youree Hotel in Shreveport, La., October 28, with a program devoted to fuels, lubricants, and refining technology.

Of particular interest at the Shreveport meeting is a paper on the lubricating value of Mid-Continent crude oils. The program in detail: "Suspended Refractories for Oil Refining," by C. F. Pollen, M. H. Detrick Co.; "Modern Engines and the Demand on Refiners for Motor Fuels," by W. W. Scheumann, Cities Service Oil Co.; "Lubricating Oils From Mid-Continent Crudes," by J. V. Brazier, Barnsdall Refining Corp.

U. S. Supreme Court to Test Oklahoma Spacing Law

WASHINGTON, D. C., Oct. 10.—The Oklahoma well-spacing law is to be reviewed by the U. S. Supreme Court, which has decided to hear the plea of Russell B. Patterson of Shawnee, Okla., a royalty owner, who contended the 1935 act of the Oklahoma Legislature was unconstitutional.

Osage Producers Seek Buyers for 3,500 Barrels of Crude Daily

Barnsdall Oil Co. officials informed a committee representing Osage County, Oklahoma, oil producers that the company is willing to run all crude from connections on its gathering lines to oil purchasers at any point on its lines. A charge of 12 cents would be made for the service. The committee is endeavoring to find buyers for about 3,500 bbls. of oil per day which will be left without a purchaser when the Barnsdall refinery at Barnsdall, Okla., shuts down on October 15.

THE MARKETS*

CRUDE OIL: *Led by Standard of Louisiana, buyers of crude lowered their schedules 13 to 20 cents in Texas, Oklahoma, Kansas, Arkansas, North Louisiana, and southeastern New Mexico. A statement from the Standard of Louisiana said crude had been sold for months by others at prices lower than the Standard's postings.*

REFINERY: *Weakness in the refinery market attributed in great measure to uncertainties concerning prices of crude. Gasoline reduced an eighth-cent in Group 3 area and soft in others. Kerosene and light fuel oils need stimulant of colder weather. Natural gasoline seasonally firmer. Unprofitable operation prompting plant shutdowns.*

TANK-WAGON AND POSTED DEALER: *Standard of Indiana reduced all tank-wagon prices to consumers and all normal prices to dealers on gasoline throughout its territory, explaining its action was due to competitive conditions. Minor changes otherwise.*

FINANCIAL: *Disturbed conditions in both crude and refinery markets kept oil shares from participating in the general rise of securities. Average of 30 representative stocks for week ending October 8: High, 29.93; low, 27.94; close, 28.45. Week ending October 1: High, 29.09; low, 25.31; close, 28.92.*

**Detailed information in market section.*

Survey of Crude Stocks Is Reassuring to Industry

By L. G. E. BIGNELL

It has been assumed often that the crude oil in above-ground storage is the main factor affecting crude oil prices. Prior to the spring of 1936 all the crude oil stocks above ground were considered suitable for refining. The question had been raised from time to time whether this was a fact and if it were not possible some of the older oil had lost much of its original gasoline content through standing in tanks.

The Interstate Oil Compact Commission and other groups interested in the forecast of demand for petroleum requested the U. S. Bureau of Mines early in 1936 to make a physical inventory of crude-oil stocks and accordingly Congress appropriated funds for such a survey. The final report on this investigation has been published as R.I. 3417.

One significant fact is revealed in this report. The investigators for the Bureau of Mines found it very difficult to determine desirable levels for stocks of crude oil, and state that "in modern statistical times, crude-oil stocks have always exceeded the minimum working stock level and prices have reacted more to withdrawals or other factors such as discovery rates, shut-in production, and under-ground stocks, than to the quantity of oil stored above ground."

Two of the primary objectives of the study were to evaluate qualitatively crude-oil stocks as an element in supply, and determine desirable levels for crude-oil stocks. The attainment of both objectives was of interest to the industry generally, but particularly to those directly concerned with conservation and proration. Obviously, if the stored oil had lost most of its light fractions through evaporation, it was no longer an important factor in the available supply of crude oil for refining and withdrawals from the older stocks could be virtually ignored in setting allowables. Likewise the determination of desirable economic stock levels for crude oil was of interest to state officials and others concerned with regulatory matters, as this would assist in determining reasonable withdrawals from or additions to stocks.

Qualitative Discussion

The qualitative discussion has shown that because the original volatility much of the older oil was superior to that of the average current production, and because much of it was stored in "vapor-tight" tanks, the older stocks, totaling about 117,000,000 bbls. on June 30, 1936, were not greatly inferior, from the standpoint of potential gasoline, to the stocks stored in the first six months of 1936.

This means that in allocating production to demand it would be inadvisable to discount stock withdrawals of old oil. On the other hand, the fact that the quality of the stored oil exceeded expectations should not be used as an excuse to increase stocks, as there will always be evaporation from oil stored above ground. In other words, the efficiency of tanks in the storage of oil never can be raised to that of the original reservoirs. No change in character of the oil occurs if the oil is not produced.

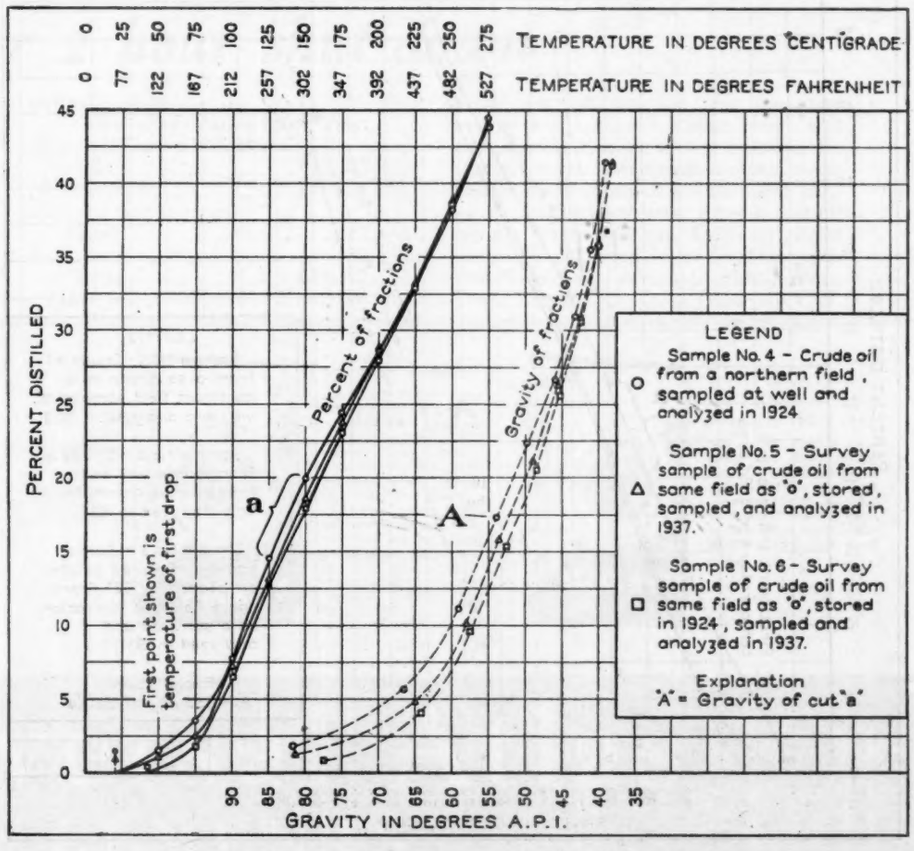
STOCKS AND DAYS' SUPPLY OF CRUDE PETROLEUM, JUNE 30, 1936, BY AGE GROUPS, BY STATES OF ORIGIN

State of origin—	Stocks June 30, 1936 (thous. of bbls.) Old crude stored before 1936	Current crude stored in 1936	Total	Daily average demand, July 1936 (thous. of bbls.)	Days' supply, June 30, 1936— Old crude stored before 1936	Current crude stored in 1936	Total
California	9,400	28,456	37,856	572.1	16.5	49.7	66.2
Texas	27,390	81,156	108,546	1,155.4	23.7	70.2	93.9
Oklahoma	44,363	43,489	87,852	650.3	68.2	66.9	135.1
Louisiana	1,483	10,809	12,292	236.5	6.3	45.7	52.0
New Mexico	408	5,746	6,154	65.0	6.3	88.4	94.7
Kansas	629	5,137	5,766	161.4	3.9	31.8	35.7
Arkansas	1,374	3,689	5,063	23.8	57.7	155.0	212.7
Other states	32,533	12,672	45,205	222.9	146.0	56.8	202.8
Foreign	.....	2,577	2,577	85.9	....	30.0	30.0
Total	117,580	193,731	311,311	3,173.3	37.1	61.0	98.1

This study of crude oil above ground shows the stocks of crude petroleum at end of each month from December 31, 1921, to June 30, 1938. There were 292,634,000 bbls. on hand as of June 30 and since then the volume of oil has decreased to 280,278,000 bbls., the smallest stock the industry has carried in 15 years, the next lowest stock being 286,759,000 bbls. on January 31, 1937. The highest stock during the same period was 433,501,000 bbls. at the end of October, 1929.

The above table from this report shows how the stock of June 30, 1936, was distributed by states and the character of the stock in regard to age and days' supply.

One point in particular is stressed. The work done in the laboratory indicates that distillate recoverable from crude petroleum in storage June 30, 1936, had suffered very small losses by natural distillation while in the tanks. The period during which these crude oils were stored ranged from prior to 1925 and then by five-year periods to 1936. For Kansas the average distillation loss for this period was 1.5 per cent; for Arkansas it was only .6 per cent; for other states it was .9 per cent and


TEMPERATURE IN DEGREES CENTIGRADE
TEMPERATURE IN DEGREES FAHRENHEIT
PERCENT DISTILLED
Percent of fractions
Gravity of fractions
First point shown is temperature of first drop
a
A
LEGEND
Sample No. 4 - Crude oil from a northern field, sampled at well and analyzed in 1924
Sample No. 5 - Survey sample of crude oil from same field as "o", stored, sampled, and analyzed in 1937.
Sample No. 6 - Survey sample of crude oil from same field as "o", stored in 1924, sampled and analyzed in 1937.
Explanation
"A" = Gravity of cut "a"
GRAVITY IN DEGREES A.P.I.

Comparative curves showing per cent and gravity data

for the entire United States only 1.4 per cent. With the use of better storage and handling oil directly from the well to terminals it is possible to avoid nearly all evaporation losses.

Another interesting table shows analyses of old and new crude oils produced from identical wells and formations in the Oklahoma fields. In each instance the oil produced in 1927, 1928, 1929, 1930 and 1932 was of higher A.P.I. gravity than the oils produced from the same wells in 1937. For instance, Wilcox oil produced in Little River field, Seminole district, in 1928 had a gravity of 40.9, while the oil from this same well produced in 1937 had a gravity of 40.2 A.P.I. That happens to be the minimum change. The maximum change recorded was in oil from the Johnson sand in the Oklahoma City field which had a gravity of 45.2 in 1930 and 40.2 in 1937. The report gives the results of distillation of these various samples at atmospheric pressure.

Changes in Oils

It also deals with the changes in oils due to field depletion and evaporation losses and presents a mass of statistical data which has to be studied in detail to secure the full importance. The accompanying figures show per cent and gravity data of distillate fractions for some of the samples.

After determining statistically the crude-oil stocks by location and origin and by age groups, and making a qualitative study of the distillate contents of this stored oil, the field depletion and evaporation losses, and the effects of field depletion on characteristics of oil produced and the effect of evaporation losses on stored oil, with other related data, the report turns to the consideration of working stocks and reserve stocks.

During the code period, when stock withdrawals were made on consent of the oil administrator, the federal agency found it desirable to establish an "objective" for crude-oil stocks of 200,000,000 bbls. The theoretical attainment of this level was dated several years in advance and the actual fluctuations in stocks were checked against the desired monthly changes.

On January 31, 1937, total stocks of refinable crude oil reached 286,759,000 bbls. after nine months of continued decline. At that time a number of refiners complained that their stocks were too low, which indicated to some observers that the total was approaching the economic minimum. Although the experience of reaching that point was a valuable contribution to the meager fund of knowledge on the subject, the complaints referred to can be discounted, largely because a considerable proportion were from refiners who in the aggregate have never held much stock, and many of the others arose from considerations related to prices or allowables.

In a paper by Fred Van Covern presented before the A.I.M.E. annual meeting held in New York City in February, 1937, it is stated that the minimum economic level between 250,000,000 and 275,000,000 bbls. is desirable. Of the two, Mr. Van Covern said the latter, "properly and equitably distributed by grades, location, and companies, would more nearly represent economically desirable levels and permit convenient and proper operation."

An interesting table was prepared allocating the stocks and days' supply of crude petroleum as of June 30, 1936, by types of storage. For comparison, the stock as of July 31, 1938, has been so subdivided in the following table:

(Figures in millions of barrels)

Type of storage—	Net stocks June 30, 1936	Net stocks July 31, 1938	Days' supply* June 30, 1936	Days' supply* July 31, 1938
Lease	11	11	4	4
Pipe line:				
In lines	21	21	7	7
In tanks	29	29	9	9
Refinery:				
At plants	47	52	15	16
In transit	4	3	1	1
Tank farm	199	172	62	53
Total	311	288	98	90

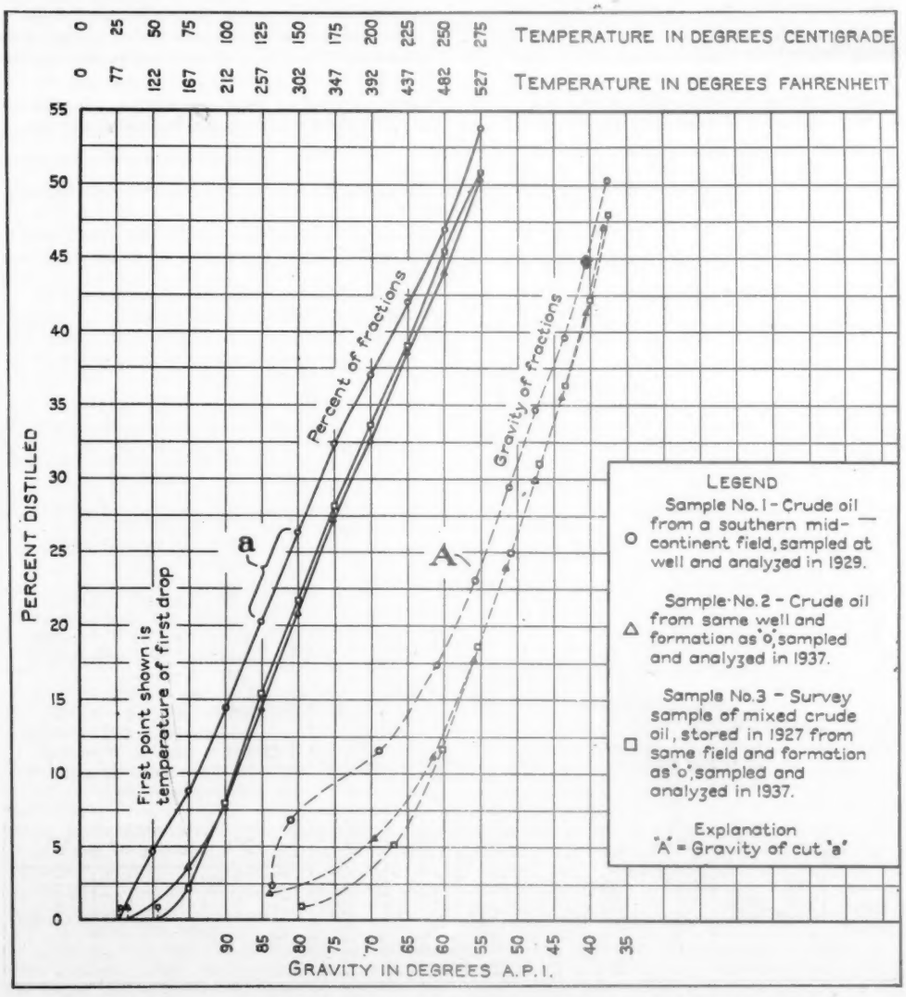
*Based on 3,200,000 bbls. per day demand.

It will be noted that about 50,000,000 bbls. of oil are needed to fill the pipe line system with oil. The report shows there was a total of 110,580 miles of pipe line in this country as of June 30, 1936, of which 57,820 miles were trunk lines and 52,760 miles were gathering lines. This sidelight in the survey is very interesting because it shows that of any volume of crude oil reported as stocks above ground there is always an appreciable per cent at the lease and in transit that cannot be actually run to stills until an equal amount has been produced and set in motion toward terminals.

Low Inventories

At this time the industry has low inventories of crude oil above ground. It is equal to about 88 days' supply, if consumed at the rate of 3,200,000 bbls. daily. As the table shows that about 20 days' supply is in transit, it will leave only about 68 days' stock that can really be delivered to the refineries. The time required to move the oil from the fields to the terminals will vary but, at the rate of between 3,500,000 and 4,000,000 bbls. per day of oil in transit, it will require one specific barrel of oil between 5¼ and 6½ days to move from its point of origin to terminal. These statistics emphasize the tremendous volume of oil actually needed to carry on this business and tied up in movement at all times. The stock of finished products en route between refinery and consumer is also of appreciable volume and all of these facts should be borne in mind when considering stocks above ground.

Individual companies will have different ways in which to evaluate their stocks of oil in the ground and in storage tanks so some may at times be inclined to feel they are handling too much crude and decide to slow down operations, while other companies at the same moment may be desirous of having more crude oil because of their particular problem.


TEMPERATURE IN DEGREES CENTIGRADE
TEMPERATURE IN DEGREES FAHRENHEIT
PERCENT DISTILLED
GRAVITY IN DEGREES A.P.I.
Percent of fractions
Gravity of fractions
First point shown is temperature of first drop
a
A
LEGEND
Sample No. 1 - Crude oil from a southern mid-continent field, sampled at well and analyzed in 1929.
Sample No. 2 - Crude oil from same well and formation as "o", sampled and analyzed in 1937.
Sample No. 3 - Survey sample of mixed crude oil, stored in 1927 from same field and formation as "o", sampled and analyzed in 1937.
Explanation
"A" = Gravity of cut "a"

Comparative curves showing per cent and gravity data of distillate fractions

Pipe Line Tariff Reductions by Oklahoma and Humble

Effective October 15 Oklahoma Pipe Line Co. will post the following tariffs effective from Oklahoma common points to eastern and Gulf Coast destinations for the transportation of crude oil by pipe line. All prices are based upon the 42-gallon barrel of oil.

	Price Old	Price New
Cabin Creek, West Virginia	.57	.46
Falling Rock, West Virginia	.57	.46
South Charleston, West Virginia	.57	.46
Heath, Ohio	.55½	.45
International Boundary	.55	.45
Cleveland, Ohio	.55	.45
To Bayshore, Ohio	.52½	.40
Latonia, Kentucky	.51	.38
Lima, Ohio	.51	.37½
Anchorage, Louisiana	.33	.25
From Louden, Ill., to international boundary (effective November 5)	.31½	.26

These reductions are being made to conform to changing economic conditions and to meet the competitive situation created by new development in Illinois.

Pipe line tolls in Texas and part of New Mexico will be reduced on October 26 by Humble Pipe Line Co., from 2½ to 7½ cents a barrel.

NO "CEMENT HEADACHES" over shutdowns with UNAFLO CEMENT on the job!

Unaflo back washed out with normal pressure after 2 hour shut down

In this particular well, a cement retainer was run to 4063' on 2¼" tubing, above the top perforations which had been previously cemented off.

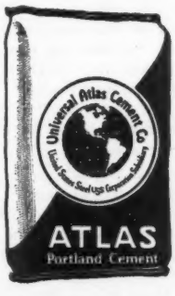
598 sacks of Unaflo cement were pumped into the tubing. Working pressure was only 1000 to 1500 lbs. At this point there was an unavoidable delay of 2 hr., 14 min. However in spite of this shut down, Unaflo was back washed out of the tubing with normal pressure.

Time of cementing operations:

Mix and pump 598 sacks Unaflo	1 hr. 23 min.
Make repairs	2 hr. 14 min.
Unscrew tubing from retainer	13 min.
Back wash tubing	32 min.
Total	4 hr. 22 min.

Have *you* tried Unaflo? If not, use it on your next job and see why operators everywhere are enthusiastic about this easy flowing cement with a retarded set that gives you *time* to get it down in the hole in the face of delays—then sets hard as a billiard ball to form a tight shut-off against water and gas. Universal Atlas Cement Co., United States Steel Corporation Subsidiary, Amicable Bldg., Waco, Texas; Kansas City; Tulsa; Oklahoma City.

A Cement for Every Oil Company use at Oil Well, Refinery, and Filling Station



Atlas portland cement for *surface* work and for cementing *surface* casing. Unaflo cement is recommended for *deep* well work.

Lumnite cement is used in Oil Refineries for making Refractory, Insulating and Heat-Resistant Concrete Linings in Still Furnace Walls, Bottoms, Roofs, Foundations, Ducts, Flues and Stack Linings; Tube Sheet Insulation.

Lumnite cement makes Corrosion-Resistant Concrete and Mortar Lining in Distillation and Cracking Units; Re-Run Stills; Absorption Systems; Chemical Treating and Ethyl Plants.

Atlas White the cement that is pure *white* and non-staining. Exceeds specification requirements for portland cement strength. Ideal for ornamental work in connection with service station construction and repair.

U-19

Universal Atlas CEMENTS

Pipe Line Activity

Public Service Gas Co. Plans For 1,500-Mile Pipe Line

Public Service Gas Co., Minneapolis, has applied to the Federal Power Commission for authority to construct a 1,500-mile natural gas line from Montana and Wyoming through North Dakota into South Dakota, Minnesota, and Wisconsin. Estimated cost is $49,402,000.

The company proposes to serve some 115 cities, towns, and villages, with total population of more than 1,000,000, none now being served with natural gas with the exception of Minneapolis.

Based on assumed average sales of 112,000,000 feet per day at 22 cents per 1,000 feet, company's annual gross income would be approximately $8,993,600. Annual total expenses and charges are estimated at $7,767,200, including $2,244,000 for purchase of 40,880,000,000 feet of gas at 5 cents per 1,000 feet; $4,168,000 interest, expense and depreciation; and $1,355,200 (10 per cent) for contingencies. These estimates indicate an annual net profit of $1,226,400. In the item of interest and amortization it is figured a loan of $50,000,000 would be amortized within 25 years plus 5 per cent interest.

The line would have intakes from fields near Shelby in north central Montana and near Red Lodge in south central Montana. The main lines would join and proceed in an easterly and slightly southerly direction through Montana and North Dakota running some 40 to 50 miles south of Valley City, continuing eastward across Minnesota to Brainerd, thence branching, with one line to the northeast and one line to the southeast.

The northeast branch would go to Chisholm and Hibbing; the southeast branch to St. Paul, Minneapolis, and Stillwater, Minn., and Eau Claire, Wis. Lateral lines in Johnstown, Valley City, Grand Forks, Fargo, Crookston, and Wahpeton, N. Dak.; Aberdeen, S. Dak., and St. Cloud and Little Falls, Minn.

Federal Power Commission Orders Pipe Line Hearing

WASHINGTON, D. C.—The Federal Power Commission has ordered that oral arguments be heard at 10 a.m., October 21, on the petitions filed by the National Bituminous Coal Commission, National Coal Association, United Mine Workers of America, Northwestern Coal Dealers Association and Maher Coal Bureau for leave to intervene and become parties to a proceeding before the commission on the application of Kansas Pipe Line & Gas Co. for a certificate of convenience and necessity for a proposed $21,470,000 natural gas pipe line project, for which the company has applied to the Reconstruction Finance Corporation for a loan of $20,000,000.

Oral argument has been set for the same date on the motion of Kansas Pipe Line & Gas Co. for an order denying the petitions of the coal interests, and on a petition filed by the partnership of Hagy, Harrington & Marsh, Amarillo, Tex., producers of the natural gas proposed to be transmitted over the proposed project, for leave to appear and join as an applicant.

The order states the argument is to cover the following questions:

Whether the petitioners are competitors of the Kansas company within the meaning of Section 15 (a) of the Natural Gas Act and as such should be permitted to intervene in the proceeding;

Whether, and if so, to what extent, the participation of the petitioners in this proceeding will be in the public interest;

Whether the Natural Gas Act requires or contemplates that the commission, in determining the question of public convenience and necessity in this proceeding, shall consider the effect which the construction or extension of facilities by a natural gas commany and the service of natural gas thereby, will have upon persons directly or indirectly engaged in the business of producing or distributing a fuel other than natural gas.

Argument on the petition of Hagy, Harrington & Marsh for leave to join as petitioner and applicant in the proceeding is to be held on the question of whether, and to what extent, the participation of said petitioner in this proceeding will be in the public interest.

Application for a certificate of convenience and necessity for the proposed 2,300-mile pipe line project, which is to reach from Kansas to the Mesaba and Cuyuna iron ranges in Minnesota and proposes to serve some 128 communities in five states, was filed with the commission on September 10. Subsequent to the filing of the application, the petitions of the coal interests and of Hagy, Harrington & Marsh were filed, the coal interests alleging construction of the project would be a serious blow to the coal industry and the railroads and would further complicate the nation's unemployment problem. The petition of Hagy, Harrington & Marsh states the firm has contracted to dedicate to the sole and exclusive use of the proposed pipe line project, from the firm's gas holdings, a gas reserve equal to the requirements of the said project for a period of 20 years.

On September 30 the Kansas company asked the commission to deny the petitions of the coal interests on the ground that none of them had shown their participation is or may be in the public interest and that none are interested parties within the meaning of the Natural Gas Act.

In a reply the National Bituminous Coal Commission asks the Federal Power Commission to deny the Kansas company's motion to dismiss its petition to intervene, stating its desire is to be helpful to the bituminous coal industry, the miners, the investors, and the consumers of coal. The coal commission denies it represents "an isolated, distinct and special group interested solely in securing special advantage to themselves," as charged by the pipe line company.

The coal commission's reply adds:

"Whether the public wants the projected gas pipe line can be developed at the hearing. And, particularly, since promoters of the pipe line seek to borrow $20,000,000 of public funds upon scant security, the entire country is interested in whether the power commission should grant to the applicant the requested certificate."

Natural Gas News

A.G.A.E.M. Statistical Committee Named by President Davis

The appointment of an advisory committee on statistics for the Association of Gas Appliance and Equipment Manufacturers has been announced by Merrill N. Davis, president of the association. The principal functions of the committee will be to decide on questions of statistical policy, and determine the kind of statistics to be gathered and disseminated.

B. F. Pickard, Central States Head, Resigns From Laclede Gas Co.

B. F. PICKARD

Ben F. Pickard, vice president and general manager of Laclede Gas Light Co. since December, 1936, has announced his resignation to devote his entire time to the Central States Power & Light Corp., of which he is president. Mr. Pickard also announced that the executive, administrative, engineering, purchasing and budgeting departments of the Central States corporation will be moved from Tulsa to St. Louis, and that offices will be established in the Laclede Gas Building about November 1. Central States Power & Light Corp. and subsidiaries produce and supply natural gas, electricity and water to 175 communities in seven states and two Canadian provinces.

Monthly Minimum Take Fixed On Michigan's Gas Tracts

SAGINAW, Mich. — Regulations establishing a monthly minimum "take" of 500,000 feet from gas wells on 40-acre tracts and of 2,000,000 feet from wells on 160-acre tracts have been promulgated by the Michigan Public Utilities Commission, effective November 1.

The new rule, according to Chairman Paul H. Todd, is designed to protect the small well owners, who, he said, have been reduced to incomes as low as $50 a year from their wells under the existing proration plan. Mr. Todd said that, on the basis of current well-head prices for gas, the new rule would assure an income of $900 a year from a well on a 40-acre tract, $3,600 a year for the larger wells.

Mr. Todd said the new rule will reduce the income of a few large well owners, but asserted the "industry as a whole approves of this new proration plan, even though the sales of the larger well owners may be decreased temporarily."

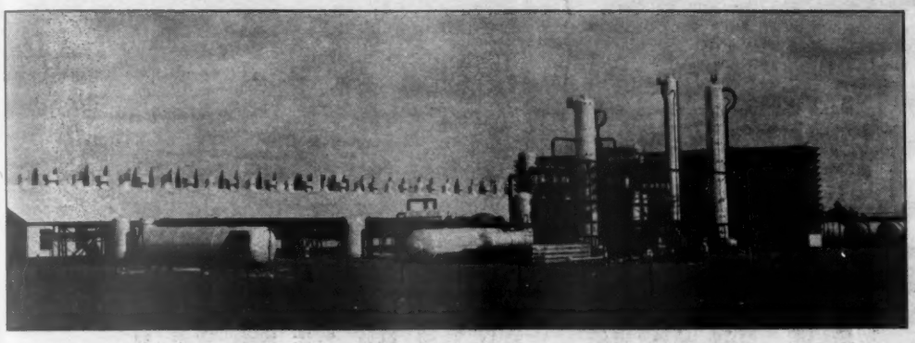
The new minimum "take" plan, Mr. Todd said, is expected to encourage drilling over a wide area in Michigan "where the open flow capacities of wells are comparatively small but in which the total gas reserves are impressive." "As these larger gas reserves are developed," he said, "delivery of Michigan gas at favorable rates to a greatly expanded market should be possible."

The new regulations place responsibility for regular inspection and repair of well-heads directly on well owners or operators and the responsibility for inspection and repair of pipe lines, after the gas leaves the well, on the distributing companies, Mr. Todd said.

New York-Pennsylvania Gas Field Operations

COUDERSPORT, Pa.—There were no completions during the week in the deep sand gas fields of northern Pennsylvania and southwestern New York but locations were staked for two additional wildcat tests. New York State Natural Gas Co. has rig up on the Sarah Hammond farm in Troupsburg Township, Steuben County, and Belmont Quadrangle Drilling Co. has located one on the Elwin Livermore farm in Independence Township, Allegany County.

Natural Gasoline



Forty thousand-gallon natural gasoline plant of the Sabine Valley Gasoline Co., Inc., located in the East Texas field north of Kilgore

Natural Gasoline Production in California Reported for August

California natural gasoline production totaled 56,440,305 gallons in the month of August; this is 1,964,985 gallons more than was produced in the previous month, according to the San Francisco office of the Bureau of Mines. The quality of gas treated and gasoline production reported by fields appears below:

NATURAL GASOLINE PLANT OPERATIONS

Field—	Gas treated (thous. cu. ft.)	Natural gasoline produced (gallons)
San Joaquin Valley:		
Beiridge	3,248,060	1,939,120
Elk Hills	57,271	119,462
Kettleman Hills	10,048,948	16,204,282
Midway-Sunset	1,093,465	2,259,348
Mountain View	325,021	433,806
Miscellaneous	1,366,494	959,017
Coastal district:		
Elwood	580,201	740,958
Rincon	175,777	214,680
Santa Maria	128,650	445,008
Ventura Avenue	3,070,026	4,546,988
Miscellaneous	483,008	503,335
Los Angeles Basin:		
Brea-Olinda Coyote	477,009	1,321,266
Dominguez	1,700,103	3,019,297
El Segundo	254,471	547,253
Huntington Beach	1,222,123	3,627,679
Inglewood	278,417	402,639
Long Beach	2,429,784	8,282,419
Montebello	497,268	715,079
Richfield	290,699	598,760
Rosecrans	574,650	893,151
Santa Fe Springs	1,828,134	5,225,732
Seal Beach	431,197	586,273
Torrance	317,815	369,244
Miscellaneous	1,117,112	2,485,509
Total (all fields)	31,995,703	56,440,305

DISTRIBUTION

	(Gallons)	(Gallons)
Stocks, beginning of month	2,169,112	
Production during month	56,440,305	
Delivered to refineries		55,499,385
Delivered to jobbers, brokers and blenders		716,641
Blended at plants for production of motor fuel		8,072
Losses		86,944
Stocks, end of month		2,298,375
Total	58,609,417	58,609,417

Liquefied petroleum gas production ..... 2,185,148 gals. = 52,027 bbls.
Motor fuel produced ..... 11,991 gals. = 286 bbls.
Note: Above data are incorporated in consolidated tabulation of refinery operations.

Utilization of Waste Tar From Natural Gas Described

The results of experimental work conducted to find uses for tar that may be formed in the conversion of natural gas to liquid fuel are described in a report just issued by the Bureau of Mines. The Petroleum Experiment Station at Bartlesville, Okla., has for some time been interested in the conversion of natural gas to liquid fuels and previously reported the results of that laboratory investigation. The process now described is designed to increase the total yield of liquid products from the pyrolysis of natural gas by approximately 25 per cent. The immediate object of the work was to convert the naphthalene fraction of the tar, formed by pyrolysis of natural gas, into liquid products by hydrogenation, using the hydrogen formed in the cracking reactions to carry out the conversion in a continuous process where hydrogenation follows directly after pyrolysis.

An apparatus for testing the activity of metals in catalyzing gas-phase hydrogenation reactions under static conditions is described. Experimental data on the hydrogenation of naphthalene in the presence of a number of different metallic catalysts are given. These data show that hydrogenation to both the tetra- and deca-derivative in the gas phase is possible. The rate of the hydrogenation reaction in these experiments depends upon the concentration of the hydrogen, the temperature, and the activity of the catalysts. Curves showing the relationships between the reaction rates and other variables are given. The preparation of the several catalysts is described in detail and their activity, expressed as a function of the reaction time, has been calculated. Of the catalysts treated, platinum, palladium, nickel, and cobalt appear to be the most active metals.

The hydrogenation of naphthalene in the tar formed by cracking natural gas is described. A nickel catalyst is used and both small- and large-scale installations of laboratory apparatus are described in which the reaction has been conducted successfully. Methods of separating the naphthalene from the heavier tars are given, together with data concerning successful runs where gas cracking to light oil and tar is combined with tar separation and hydrogenation, using the hydrogen formed in the cracking process. A distillation analysis of the products is shown.

Bureau of Mines Technical Paper 587, "Studies Pertaining to the Catalytic Hydrogenation of Pyrolytic Tars," by H. M. Smith, Harry T. Rall, and Peter Grandone, may be obtained from the Superintendent of Documents at a price of 10 cents.

Refinery Expansion

Consumers Plans to Build Northwest Kansas Refinery

Construction of refineries in northwest and central Kansas is contemplated by Consumers Cooperative Association, north Kansas City, although no locations have been selected. Howard A. Cowden, president, said the association proposes to establish a northwest Kansas refinery to process Kansas and Colorado crude. If the venture is successful, a second refinery would be built in central Kansas. The northwest Kansas refinery would have a capacity of 3,000 bbls. per day.

Arkansas Fuel Oil Begins Modernization Program

A refinery construction program of major proportions will begin shortly at the Bossier City, La., plant of the Arkansas Fuel Oil Co. The new work is designed to modernize operations at the refinery, and the additions to be made to the plant will replace older units, and will improve the quality of products.

The project consists mainly of the construction of a polymerization plant, a new unit for cracking gas oils and reforming heavy naphthas and kerosene, and a small crude furnace to increase the heat input to present topping units. All work is being done on a turn-key contract with the Alco Products Division of the American Locomotive Co.

Engineering work on the new program has been completed. Approximately one-third of the materials have been purchased at the present time, and one-half will be purchased by the end of October. Actual construction work will begin with the pouring of foundations within a week. The new units are slated for initial operation by February 15.

The new cracking and reforming unit will handle an input of 2,000 bbls. daily, and its flexibility will allow the processing of cuts varying from gas oil to heavy naphtha.

The polymerization unit is of the thermal type licensed under Pure Oil Co. patents. A yield of from 11,000 to 20,000 bbls. of poly distillate will be produced monthly in the new unit, depending on the type of charge. Cracked gases from existing cracking units and the new plant will be processed. Operation of the new cracking unit will directly affect the yield of the polymerization plant, giving a richer charging stock with reforming operations.

The Arkansas Fuel Oil refinery has a current crude capacity of 23,000 bbls. daily, with cracking capacity of 15,000 bbls. With the completion of the new installations, older cracking units will be retired from service.

Scientists to Prepare Pure Gasoline Hydrocarbons

Preparation of pure hydrocarbons of the gasoline type so that their engine combustion characteristics can be determined will be undertaken by the Ohio State University Research Foundation. This project is sponsored by the American Petroleum Institute.

Huriburt S. Jacoby, research director of the foundation, has announced the work will be under the direction of Prof. Cecil E. Boord of the chemistry department of the university, who will be assisted by Albert L. Henne, of the university staff. The project, which will develop several dozen pure gasoline hydrocarbons in quantities sufficient for testing in engines, is expected to shed new light on "what makes the wheels go round" in motor vehicles.

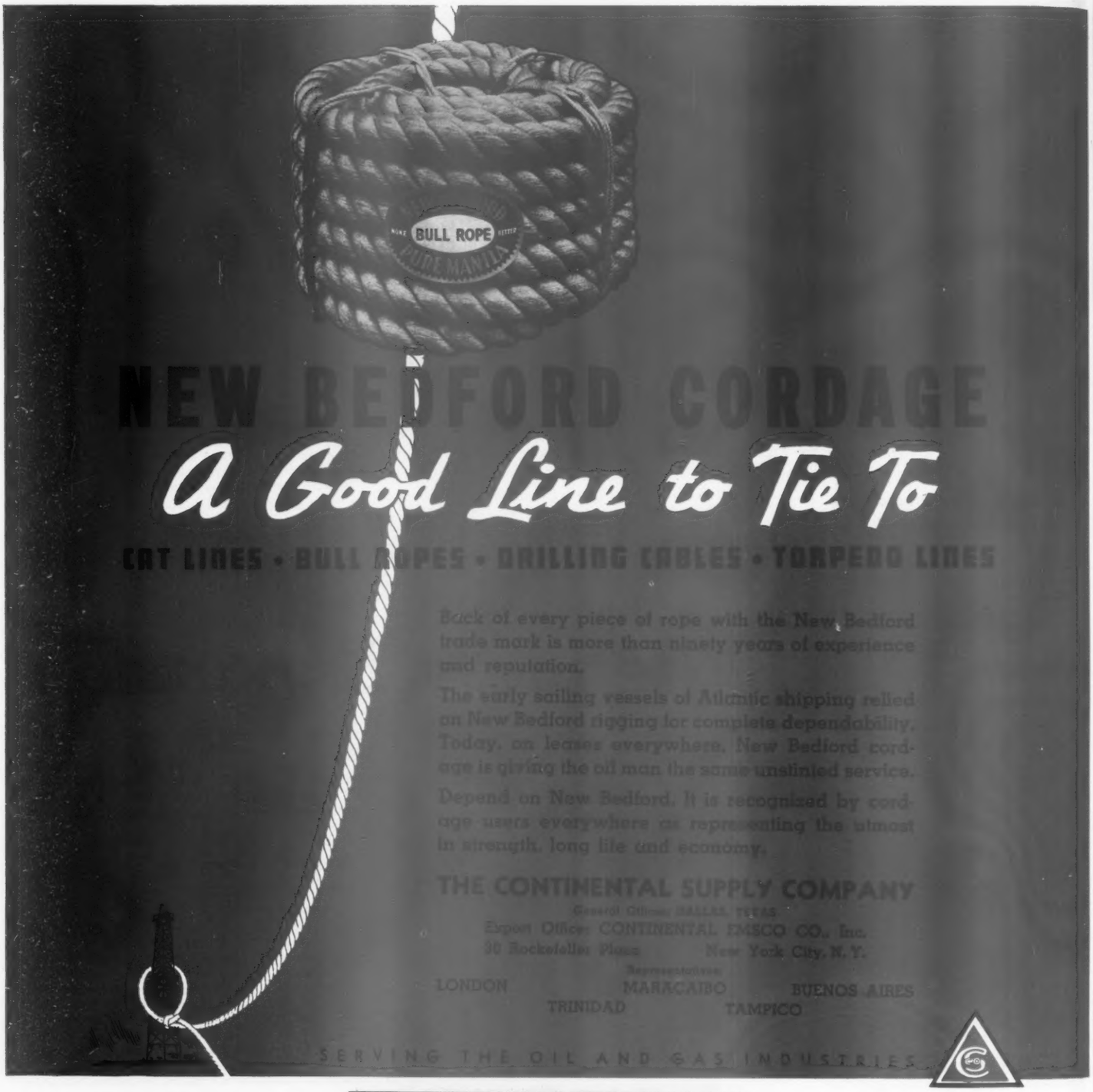
The advisory committee in charge of the work includes D. P. Barnard, Standard Oil Co. (Indiana), chairman; T. A. Boyd, General Motors Research Corp.; Gustav Egloff, Universal Oil Products Co.; F. W. Hall, Texas Co.; J. Bennett Hill, Sun Oil Co.

Small Medicine Hat Refinery Project Proposed

MEDICINE HAT, Alberta, Oct. 8.—Hydro-Pete Oils, Ltd., of Calgary, which operates a number of small local refineries in the prairie provinces, is negotiating for the erection of a similar plant, at a cost of $30,000, to serve Medicine Hat and district. If satisfactory arrangements can be concluded, construction will be commenced this year.

West Central Texas Meeting

The annual meeting of the West-Central Texas Oil and Gas Association will be held in Abilene Saturday, December 10.



NEW BEDFORD CORDAGE

A Good Line to Tie To

CAT LINES • BULL ROPES • DRILLING CABLES • TORPEDO LINES

Back of every piece of rope with the New Bedford trade mark is more than ninety years of experience and reputation.

The early sailing vessels of Atlantic shipping relied on New Bedford rigging for complete dependability. Today, on leases everywhere, New Bedford cordage is giving the oil man the same unstinted service.

Depend on New Bedford. It is recognized by cordage users everywhere as representing the utmost in strength, long life and economy.

THE CONTINENTAL SUPPLY COMPANY

General Offices: DALLAS, TEXAS

Export Office: CONTINENTAL EMSCO CO., Inc.
30 Rockefeller Plaza New York City, N. Y.

Representatives:
LONDON MARACAIBO BUENOS AIRES
TRINIDAD TAMPICO

SERVING THE OIL AND GAS INDUSTRIES

CONTINENTAL

INTERNATIONAL NEWS

Urdaneta Exploration Concludes Deal With Standard Oil Co.

Urdaneta Exploration Co., a 100 per cent owned subsidiary of Maracaibo Oil Exploration Corp., announced last week that it had recently concluded negotiations and arrived at an agreement with Standard Oil Co. of New Jersey and Standard Oil Co. of Venezuela whereby the Urdaneta's one-third interest in approximately 10,500 acres of non-producing oil concessions in the district of Sucre-Bettijoque, Venezuela, is exchanged for a 2 per cent royalty interest. This property was one of the first in which Standard of New Jersey acquired an interest when, through subsidiaries, it started operations in that country several years ago. The property is west of Lake Maracaibo and has been partially explored.

Mexican Supreme Court Dismisses Oil Companies' Appeal

The Mexican Supreme Court October 8 dismissed an appeal of the oil companies against expropriation. The court held the companies had not exhausted other administrative recourses open to them and that the matter thus was not one for the supreme court to rule on. A petition for revocation of the expropriation decree, the court ruling pointed out, still is under consideration by the department of national economy whose decision must be waited before starting up through the courts again to get a final decision.

Foreign oil shipments from Mexico have steadily increased during April, May, June, and July, according to a statement credited to the government's oil agency. The dispatch from Mexico City containing figures on the foreign shipments during those four months is one of the first statements credited directly to the government petroleum department since private properties of 17 American and British companies were confiscated last March. The government statement said that April petroleum shipments totaled 35,076 bbls.; May, 615,615 bbls.; June, 723,172 bbls., and July, 733,774 bbls. Under private company operation, Mexico's petroleum exports averaged about 2,000,000 bbls. per month.

Meanwhile, much interest was focused on the conferences held last week between President Cardenas and Dr. Francisco Najera, Mexican ambassador to the United States, who returned to his country by airplane presumably bearing a concrete plan for settlement of the agrarian land expropriation question which has been the subject of several notes passed between the two governments.

The proposal placed before President Cardenas by Ambassador Najera was reported from Mexico to provide for Mexico to lay aside certain government incomes in a special account during the progress of joint negotiations for settlement of more than $10,000,000 in claims, which would be adjudicated by an impartial judge under the Gondra Treaty in case of a disagreement.

Further, according to Mexico City reports, President Cardenas is asked to agree that there will be no further expropriations of American agrarian properties without prompt payment, except for those properties already provisionally expropriated.

The State Department has remained particularly aloof from the petroleum property expropriation question despite the fact that American companies whose properties were seized by Mexico place an approximate value thereon of $150,000,000. The State Department has given no indication, however, of feeling that it can force their return. Washington officials have always expressed the opinion that if they could once get Mexico paying for some of the seized property, the solution of other problems would be easier and the Mexican expropriation program would be slowed.

Meanwhile, the Mexican National Railways, under labor management, has advised dollar creditors that it will be unable to make any dollar payments until next January, if then. The railroads were expropriated without indemnity to United States, French, British, and German bondholders. Payments are to be halted on 12 locomotives purchased from American Locomotive Co., among other equipment, under a moratorium, it is understood.

The Mexican Government, according to Mexico City dispatches, has shipped 575,000 bbls. of Poza Rica crude oil into Texas since August 20, putting it well ahead of its schedule of 10,000 bbls. a day to Eastern States Petroleum Co. The last two shipments were 94,000 bbls. October 1 and 35,000 bbls. October 4. Two tankers, the Pericles and the McIlvain, are shuttling the oil into Texas ports. The government is selling this oil at 70 cents per barrel. The government was reported accepting payment in mortgages from eastern states.

Reports were current in New York last week that Texas is planning to ask the legislature for a special processing tax on foreign oil.

The Poza Rica field was formerly largely owned and operated by Mexican Eagle Oil Co., Royal-Dutch Shell subsidiary.

Reports also reached New York last week that Mexico is negotiating for a further sale of oil to Germany in exchange for four tankers.

French-Rumanian Company Sells Rumanian Refinery

It was reported from London last week that "Petrol Block" S.A.R., one of the large producers and refiners in Rumania, has sold its "standard" refinery to Maschinen-und Waggon Werke, A.G. of Brno (Czechoslovakia) for 47,500,000 kroner, payable in 14 quarterly installments. The kroner is worth about 3½ cents U. S. currency, making the deal as reported involve about $1,662,500.

"Petrol Block" is a French and Rumanian company operating three refineries in the latter country. It is represented in practically all Rumanian producing fields. Rumania is one of the chief sources for Czechoslovakian imported petroleum. Oil produced in Czechoslovakian fields is in the first place insufficient for internal requirements and is practically valueless for production of the more volatile by-products.

British Imported 57 Per Cent More From This Country

The United Kingdom's receipts of petroleum from the United States increased nearly 60 per cent during the first eight months of this year compared to purchases in the same 1937 period.

Imports of petroleum into Great Britain in August totaled 273,716,000 Imperial gallons (35 gallons per U. S. barrel of 42 gallons) compared with 301,948,000 gallons in August, 1937. For the eight months total imports were 113,970,000 gallons, or 5.4 per cent higher.

Increases in deliveries from individual countries are apparent from Netherlands West Indies, 7.7 per cent; United States, 57.4 per cent; British West Indies, 22.2 per cent; Iraq, 38 per cent; and Venezuela 88.8 per cent.

Since trade with Mexico was virtually halted after the expropriation of oil properties last March, the drop of 46 per cent in receipts by Great Britain was expected. Other substantial declines were reported from Iran, 11.3 per cent; Rumania, 43.5 per cent, and Peru, 68.3 per cent.

Oil Production in Trinidad Continues Upward Trend

The upward trend of crude oil production in Trinidad which has continued without interruption since 1934 is setting new recent records again this year. During the first six months of this year, Trinidad has produced 8,452,862 bbls. of crude, or 1,163,691 bbls. more than in the corresponding period last year. The increase represents a gain of about 15 per cent.

Exports of oil also further advanced, reaching a total of 7,173,000 bbls. for the first six months of this year as against 6,985,000 bbls. for the same period in 1937.

The large sums spent by Trinidad refining companies on modernization and improvement of plant facilities are reflected in the nature of exports. During the first six months of the current year only about 4 per cent of all petroleum exports were shipped in the form of crude oil.

The following table illustrates the trend of production and exports:

(Figures in 1,000 bbls.)

	Production	Exports
1934	10,894	9,982
1935	11,672	10,980
1936	13,237	12,382
1937	15,503	14,097
1937 (first half)	7,289	6,985
1938 (first half)	8,453	7,173

In the first half of this year gasoline exported totaled 1,794,000 bbls., an increase of 20 per cent as against the preceding year, whereas exports of other products showed a slight decline. This trend is in keeping with the refinery improvement expenditures made by two or three of the larger companies operating on the island.

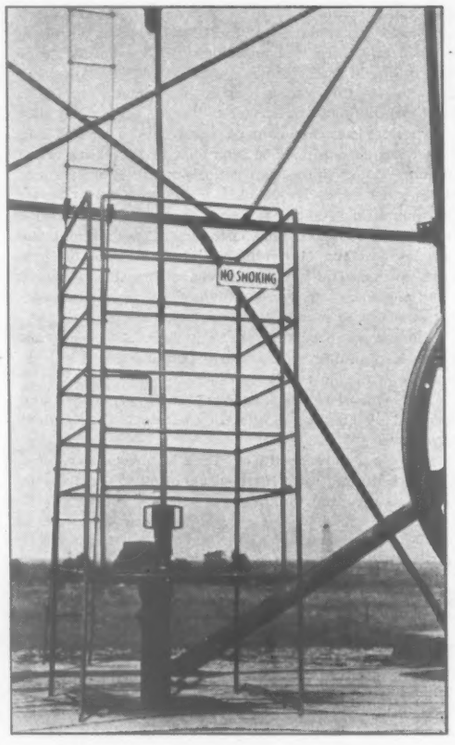
A typical flow station in the Pedernales, Venezuela, field, on S.O.V. property. The pumps at the left of the separator and tanks are used to move the oil direct to tankers for export

SAFETY- Around the Pumping Well

Attention to detail is of major importance in the prevention of accidents. The owner of the well pictured here is taking precautions against his men getting hurt or a passerby coming inside the derrick and being injured by the contact with the well-head. The fence around the well-head is a warning to all who visit the well that here is a source of danger. At night, the lease workmen are safe for they cannot walk into the well-head accidentally. However, if they need to tighten the stuffing box or do anything to the well-head, they can remove the gate in front and walk in. In case the rods and tubing need pulling they simply remove the gate and slide the cage back out of the way. The company welder made the barricade from sucker-rods.

Cleanliness of the floor is an aid in preventing accidents. There is no danger of twisting an ankle or stumbling over some object. The concrete floor makes it easy to get to the well-head and makes a good place for the men to work when doing rod and tubing jobs. There is no opening between the casing and the floor in which a man might fall. The flow line from the well has been buried and it is not necessary for a man to climb over a line every time he comes to the well.

The derrick ladder reaches to the ground but is partially obscured by the well-head guard in the picture. When it is necessary for a man to climb the derrick he can go up the ladder without climbing the derrick braces to the first girt. When coming down, there is no danger of his falling when the ladder ends as is the case when the ladder does not reach the ground. The "No Smoking" sign on the well-head guard is a warning to the workers that there is always a danger of fire when oil is being pumped.



Crude Prices Reduced

(Continued from Page 25)

a 3-cent differential to 26 gravity and then a 2-cent differential to 45 and above, making the top price $1.33, a 13-cent cut.

Salt Flat, Darst Creek, Hilbig, Carroll, Clark, and Zoboroski posted a flat 96 cents.

East Texas at $1.10; Van at 93 cents; Pettus at $1.29; Pecos County at 78 cents; Talco at 55 cents; Flour Bluff at $1.27.

Effective October 7 the Bell Oil & Gas Co. cut its crude price 17 cents in North Texas (Burkburnett pool), and in southern Oklahoma (Riverbed pool, Tillman County), making its Burkburnett price 79 cents for 28 gravity, adding 2 cents for each degree up to 40 and over at $1.03. Its Oklahoma price is 10 cents higher on each degree. In announcing the cut the company said its refinery has been taking a steady and consistent loss every month in 1938, compelling it to either cut its crude prices or stop buying oil.

Effective October 10 the Bay Petroleum Corp. announced it would make a 25-cent gathering charge against producers on its lines in the McPherson, Kans., district without lowering its posted price.

The National Refining Co. announced on Monday that effective October 12 it would reduce its posted price in northeastern Oklahoma and eastern Kansas fields 20 cents per barrel on all grades of crude.

Effective October 7 Atlantic Petroleum Purchasing Corp. cut Refugio and Greta crudes 15 cents per barrel, posting below 21 gravity crude at 86 cents with a 2-cent differential upward to 40 and over at $1.26. In Barbers Hill, Texas, Atlantic posted below 21 degrees, 95 cents, with a 3-cent differential up to and including 26-26.9 at $1.13, and a 2-cent differential upward to 40 degrees and over at $1.41. It posted Aransas Pass, Texas, below 21 degrees $1.01 with a 2-cent differential upward to 40 degrees and over at $1.41.

Standard Oil Co. of Indiana, effective October 11, reduced crude prices in Oklahoma and Kansas 20 cents per barrel on all grades, and the Stanolind Oil Purchasing Co. cut North Texas crude 20 cents on all grades and met the Humble Oil & Refining Co. prices in other Texas fields in which both purchase, but retains its own gravity range.

H. H. Cross met the new Smackover price of 73 cents and McMillan Petroleum Corp. posted Smackover at 75 cents per barrel based on 98 per cent tank tables and 73 cents based on 100 per cent tables. Root Petroleum Co. met Lion Oil & Refining Co. and Phillips Petroleum Co. prices in Schuler, Arkansas, based on 98 per cent tank tables. All these Arkansas prices were made retroactive to October 5.

Deep Rock Oil Corp. and Bell Oil & Gas Co. met the 20-cent cut in Oklahoma; the Falcon Refining Co. did likewise in Kansas and Bell General Oil Co. met the $1.10 price in East Texas, all on October 11.

Sinclair Prairie Oil Marketing Co., effective October 11, made the following new prices, all reductions: Oklahoma and Kansas, below 25 degrees, 60 cents; 25 degrees 80 cents, adding 2 cents for each degree up to and including 40 and above at $1.10; North and Central Texas, and Mexia district, below 29 degrees, 76 cents, adding 2 cents for each degree up to and including 40 and over at $1; Gulf Coast, same as Humble prices, below 20 degrees, 79 cents, with 3 cents added for each degree up to 26 degrees at $1, then adding 2 cents for each degree up to 40 degrees and over at $1.28; West Texas and Lea County, New Mexico, below 25 degrees 63 cents, with 2 cents added for each degree up to 40 degrees and over at 95 cents; Gray County, Texas, 28 degrees 72 cents, with a 2-cent differential up to a top of 96 cents for 40 degrees and over; Carson and Hutchinson counties, 5 cents lower on each degree than in Gray County; East Texas, $1.10 per barrel and Eddy County, New Mexico, 77 cents per barrel.

S.A.E.

(Continued from Page 29)

new models are quickly disclosed and repair men are constantly confronted with new maintenance problems. In this connection it is suggested that these maintenance problems would be greatly diminished if automotive manufacturers would assign qualified engineers to this territory for the purpose of observing and reporting upon the performance of their vehicles directly to the chief engineers of their respective companies. The Mid-Continent oil field is generally regarded as being one of the best proving grounds in the world for automotive equipment. Vehicles that render satisfactory service in the hands of fleet operators in other sections of the country under normal operating conditions, frequently fail to meet the exacting performance required for oil industry operations.

"Through the medium of a resident engineer, the manufacturer would be assured of receiving prompt and reliable information concerning deficiencies in current model cars and trucks not disclosed by normal operation nor by ordinary testing methods.

"Premature mechanical failures, usually of a minor nature, frequently prevent vehicles from rendering dependable and economical service under the severe operating conditions which confront the oil industry at all times.

"Experience indicates that the present scheme of relaying constructive criticism to responsible officials through sales department channels is much too slow and unreliable.

"Frequently the vehicles are worn out before official cognizance is taken of the situation and remedial measures applied.

"It is realized that automotive manufacturers cannot justify increased costs on volume production simply to build better motor vehicles for the oil industry.

"It is believed, however, that resident factory automotive engineers working in close cooperation with oil company engineers and technologists should contribute much toward improved safety, reliability and economy of vehicles used in the oil industry without increasing their cost of production."

The meeting ended with a banquet Friday night at which teams of the engineering schools of Kansas State College and the University of Oklahoma debated the question: "That rear engine mounting is more desirable than forward engine mounting for passenger cars."

ENGINEERING and OPERATING

In This Issue

DIFFICULTIES OF KILLING BLOWOUT IN COASTAL LOUISIANA WELL
By Neil Williams ..... *Page 44*

The driller was pulling the pipe from the 9,667 feet of hole on the Texas Co. No. 2-B State when the well blew in making 278,800,000 feet of gas per day. The well, located in Vermilion Bay, is in from 3 to 9 feet of water, 3 miles from the nearest land, and 16 miles from the base of operations. Killing of the well presented many difficulties and cost the lives of two men.

SAFETY ..... *Page 46*

OKLAHOMA CITY DOLOMITE WELLS SHOW RAPID PRODUCTION DECLINE
By Harry Simons ..... *Page 49*

Operators of wells in the Simpson dolomite zone in the north Oklahoma City field are faced with rapid production decline and encroachment of salt water. Frequent work-over jobs are necessary and rigs and often left over the wells in anticipation of corrective measures.

WRINKLE BENDING USEFUL IN LAYING PIPE LINE IN ROUGH COUNTRY *Page 50*

In mountainous country where it is difficult to get heavy machinery for cold bending of pipe lines, wrinkle bending is very successful. It can be used on all sizes and weights of pipe and for any type bend.

CONSERVATION BY RECYCLING, REPRESSURING AND STORING GAS
By D. H. Stormont ..... *Page 56*

Before proration went into effect, oil fields declined from 60 to 66 per cent during the first year after they reached peak production. Former methods of production left large amounts of oil in formation which could have been recovered had practical conservation been practiced. This article is an abstract of a paper by J. H. Dunn in which he discusses the value, operation and cost of recycling, repressuring and storing of gas in formations.

SUPPLEMENTARY BARREL CHECKS SCALE TROUBLE ON SUCKER RODS
By J. P. O'Donnell ..... *Page 61*

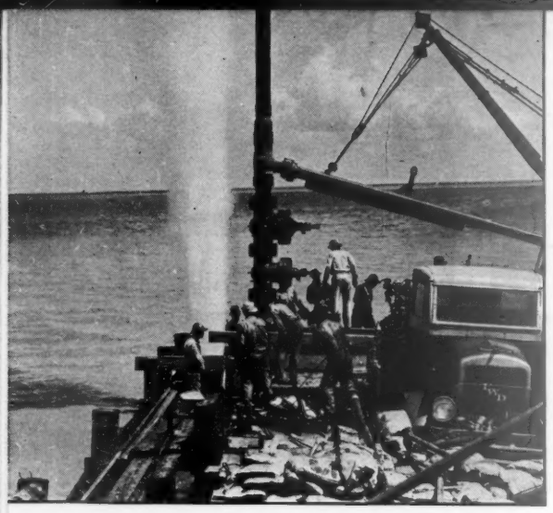
Introduction of air repressuring in the Middle District fields of Pennsylvania increased the problem of corrosion of pumping equipment as the mixture of air and water created an ideal condition for the deterioration of sucker-rods. This difficulty has been overcome by the addition of a scavenger barrel and now wells which had to be pulled every nine days require work only every six months.

METALS PROGRESS—*By W. L. Nelson* ..... *Page 53*

OPERATING IDEAS ..... *Page 59*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 63*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 64*



Moving Patton barge into position over well

Novel Engineering To Control Wild

By NEIL WILLIAMS

Complete details covering the blowout and successful killing of Texas Co. No. 2-B State, in Vermilion Bay, off the coast of Iberia Parish, coastal Louisiana, are revealed in a report just compleetd for the Louisiana Department of Conservation by Donald E. Fuellhart, petroleum engineer for the department at Lafayette, La.

The report was prepared under the direction of W. F. Chisholm, chief engineer of the Department of Conservation. Mr. Fuellhart was assisted by E. J. Hagstette, district engineer, Lafayette, and by officials and production superintendents of the company, including R. C. Stewart, division manager, Shreveport; J. L. Shea, district superintendent, Lafayette; and Ira Lee Blackstop, field foreman.

Located in from 5 to 9 feet of water, 3 miles out in the bay, 16 miles by water from the base of operations, and 27 miles from New Iberia, nearest town, the blowout and its killing presented unusual problems, especially in view of the tremendous gas volumes and pressures. Control of the well cost the lives of two men, W. L. Patton and Edward Richardson, both associated with Patton Corp., oil well firefighters, Houston, Tex. H. L. Patton, president of the company and brother of W. L. Patton, was injured, losing an arm. A member of Texas Co. crew also was injured.

Specific location of the well is 14,122 feet south and 15,689 feet west of the southeast corner of Section 20-15s-6e, in Township 16s-5e, Iberia Parish, 3 miles southwest from Cypremont Point, nearest land. The company's boat landing is on the south side of Avery Island, 16 miles away.

Blow-Out Came Fast

The well blew out June 3 from a total depth of 9,667 feet, while the driller was coming out of the hole with the 2⅞-inch drill pipe. Thirty-four stands or approximately 3,060 feet of drill pipe had been pulled when the gas started to come with so much speed and force there was not time to connect the kelly joint on the drill stem. Approximately 6,600 feet of drill pipe was left hanging on the rotary slips. On the well were two blowout preventers, including a manually operated preventer on bottom and a hydraulically operated preventer on top, these being flanged together and connected to the 13⅜-inch swage by a spool which had 3-inch side connections. Attempts were made to close the preventers but the rams were quickly cut out by sand. Also the dry bushings behind the slips were blown out of the rotary table, letting the 6,600 feet of drill pipe drop.

Drilling of the well had been started August 24, 1937. Sixteen-inch conductor pipe was set in 17½-inch hole at 95 feet. At 1,153 feet 13⅜-inch surface casing was cemented with 175 sacks. At 7,284 feet 9⅝-inch casing was cemented with 1,500 sacks of cement. The latter string consisted of 2,000 feet of 43.5-pound pipe on bottom and 5,284 feet of 40-pound, seamless, Grade D pipe on top. Maximum weight of this was 194,250 pounds. Cement was allowed to set four days. A "short string," consisting of 2,990 feet of extreme line, 5¾-inch, 22.5-pound casing was set and cemented with 675 sacks of cement on bottom. Anticipating difficulty in getting this pipe down, operators ran a millable shale bit on bottom. After setting of cement this milling out of the shale bit, and making about 6 inches of new hole, using 2⅞-inch drill pipe, the driller started out of the hole, which was followed by the blowout.

Calculated Pressure

Assuming the bottom-hole pressure to be the closed pressure at the well head plus the weight of the static column of gas extending from the producing formation to the well head, the bottom-hole pressure calculation was based on the formula:

$$P_s = P_1 + P_1(e^{0.0000187GL} - 1)$$

Where:

P_s = pressure at the sand, lbs./sq. in.
P_1 = closed pressure at the well head, lbs./sq. in.
G = Specific gravity gas assumed as 0.60 of air.
L = length of gas column, feet
e = Naperian logarithm base = 2.71828

P = 3,500 lbs. per sq. in.
G = 0.60
L = 9,667 feet

Solving:

P_s = 4,280 lbs. per sq. in.

The total vertical lifting force of the gas transmitted to the casing by the tie chains when the well was closed in was calculated at 214,600 pounds. This was figured by the department engineers on the basis that the vertical force would be the total force acting on an area equal to that of the inside cross section of the casing. The formula used was:

$$P = p \times A$$

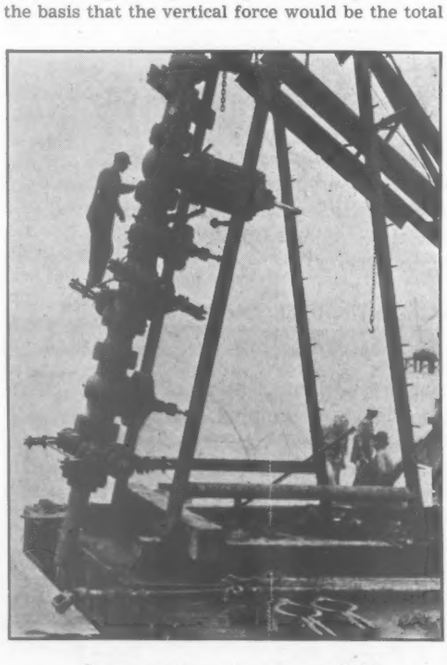
Where:

P = total force
p = unit force
A = area acted on by the unit force

p = 3,500 lbs. per sq. in.
A = area of cross section of casing

$$\pi R^2 = \pi\left(\frac{8.835}{2}\right)^2 = 61.306 \text{ sq. in.}$$

P = 214,600 pounds



Comparative size of manifold

Within the first 24 hours the upper blowout preventer was cut out by sand and fell off. This was followed during the next 24 hours by cutting off the lower preventer, leaving, of the well connections, only the 9⅝-inch by 13⅜-inch swage on the 9⅝-inch casing. Jagged teeth were cut in the top of the swage.

Calculations made by Department of Conservation and Texas Co. engineers rated the open flow during the blowout at 278,800,000 feet of gas daily. These were based on pitot tube tests. Quoting the engineering report:

"An impact pressure of 135 pounds per square inch was obtained in the top of the 13⅜-inch swage, about 2 inches inside the wall of the swage.

"Using Reid's formula[1] for open flow, which has been generally accepted by the gas industry,[2] the capacity is estimated as follows:

$$Q = 23.81\ d^2\ (P + 14.7)$$

Where:

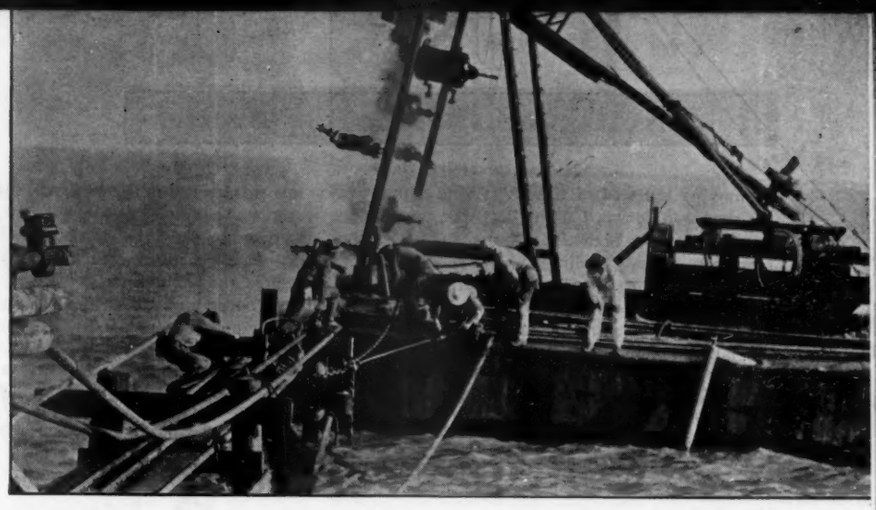
Q = Rate of flow M. cubic feet per 24 hours.
P = Impact pressure of center of pipe, lbs./sq.in.
d = Internal diameter of discharge pipe, inches.
Q = 23.81 (8.835)² (150)
Q = 278,800 M.C.F. per day.

"It should be definitely noted that the internal diameter of the casing, not the internal diameter of the swage, was used in the above calculation, that the impact pressure recorded was not in the center of the opening where it is greatest, and that 6,600 feet of 2⅞-inch drill stem remains in the hole."

Bottom-hole pressure was calculated at 4,280 pounds per square inch. While pumping water through the manifold when the control valves were open and the gas was blowing through the stack, the flowing well-head pressure was 400 pounds per square inch. When the control gates were closed and gas was blowing through the 4-inch connection, the pressure gauge placed on the manifold read 2,800 pounds per square in ı. When the well was shut in except for small gas leakage through the control valve, the pressure gauge read 3,500 pounds.

Representatives of M. M. Kinley Co. of Houston arrived at the well on June 4, the day after the blowout, and spent several days clearing away debris and material. Due to lack of an available

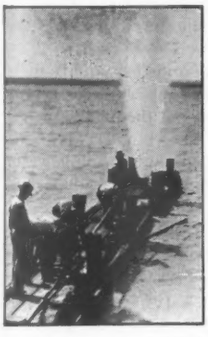
...g Is Applied ...d Bay Well



Adjusting position of barge and manifold over well. Note siphon in place to bring into barge to partially sink it

crew and equipment, this company decided not to attempt to close in the well, and left June 7. The Patton Corp. then was called on the job, its crews arriving June 8.

Connections for making up the christmas tree had arrived at the Avery Island landing the day before. These included two 10-inch 6,000-pound test control valves, the top one being a drilling valve and the lower one a manifold valve; with 2-inch and 4-inch gate valves tested to 10,000 pounds. The tree was connected up at the Avery Island landing, and assembled on the Patton swage manifold. The entire assembly, flanged on the blowout truck, was loaded on a barge, which was towed to the well.



Laying 2-inch steam line to well

In the meantime, as a safety measure to protect and strengthen the producing string, about 1,000 sacks of cement had been pumped between the 13⅜-inch and 9⅝-inch casing strings by trucks, also moved to the well on barges. Pressures ranging from 800 to 1,000 pounds were required.

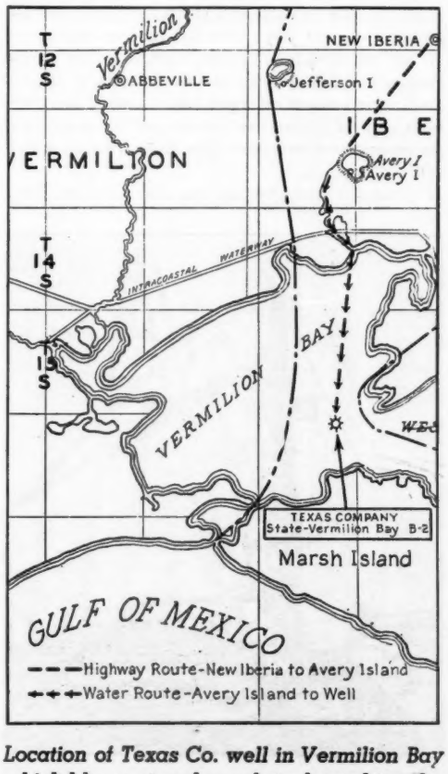
The well was drilled by a submersible drilling barge, which, because by this time the derrick had become weakened by sand and vibration of the gas flow, was floated and towed away from the well, leaving only the well itself with the casing protruding above the water. The company's camp, erected on piling near the well, had been abandoned and the boiler barge had been moved from a location close to the well to a position by the camp site, and steam lines were laid from the boilers along the walk from the camp to the well.

Make Connections Fast

The barge carrying the blowout truck, with assembled christmas tree connections, was moved to the well site at 9:45 a.m. June 11, and by 11:30 a.m. the connections had been stabbed into the 13⅜-inch swage on top of the casing. By 4:15 o'clock that afternoon the assembly had been turnbuckled down.

An attempt then was started to electric-weld the swage to the christmas tree. The jagged edges around the top of the swage were cut off with a torch and the swage tack-welded to the tree at several places. Small leaks of gas around the swage caught fire. While these blazes were extinguished by water hose, the hazard caused further attempts at electric welding to be abandoned, and attention was directed to tightening turnbuckles.

With the 4-inch side connections open to relieve the pressure, closing of the 10-inch valves was undertaken. Water was pumped into the near 4-inch connection to keep the control valves from freezing as they were closed. The control valves were closed alternately, a small amount at a time, using wrenches on the hand wheel. When it became impossible to turn the valves by the hand wheels a remote control stem was attached to each valve stem alternately, and with three sets of chain tongs and wrenches with four men to each for power, the well was closed in. Because of the rocking wave action the barge which carried the blow out truck, and the transmission of the motion to the christmas tree by the boom on the truck holding the tree, the stack was unflanged, and removed, leaving the tree free. The 4-inch side gas outlet was closed and an attempt made to pump water into the well through the other 4-inch connection. Little headway was made, and serious leaks developed between the 13⅜-inch swage and the christmas tree. To relieve the pressure, the crew decided to open the 10-inch gates. While the stack, which had been removed, was being flanged preparatory to opening the control gates, the entire christmas tree was blown off the casing into the bay. The well caught fire but a slug of water which had been pumped into the well put it out. It was this disaster that caused the deaths of two men and injury to H. L. Patton. The manifold blown into the bay weighed approximately 9,000 pounds.



Location of Texas Co. well in Vermilion Bay which blew out and was later brought under control

With the manifold blown off, the well (June 12) was in the same condition as on June 7, prior to stabbing the christmas tree assembly in the swage, except that the swage itself also was blown off the 9⅝-inch casing, leaving only the casing. No letup in gas volume or pressures was noted.

New Christmas Tree

After the disaster the Patton equipment was towed to Avery Island landing, where repairs necessitated by the explosion were made, requiring until June 16. A new special christmas tree assembly was ordered. Control valves consisted of one 10¾-inch pressure-operated opening and closing valve, one 9⅝-inch manually operated manifold valve (upper), and one 10¾-inch manually operated drilling valve. Side connection valves were 4-inch double-flanged gate valves. Spools were 9⅝ inches in diameter. Two of the three spools had 4-inch openings. The manifold and casing clamps were manufactured from special nickel alloy steel which had a minimum yield point of 110,000 pounds per square inch. These were 2 inches thick, 9 inches wide and 60 inches long. All tie rods were made from material of the same specifications as the clamps. Each of the four tie rods used on the wings of the manifold was 1⅜ inches in diameter and 14 feet long. Each of those for fastening the manifold to the casing was 2 inches in diameter. All valves and spools were shop tested to 6,000 pounds with hydraulic pressure.

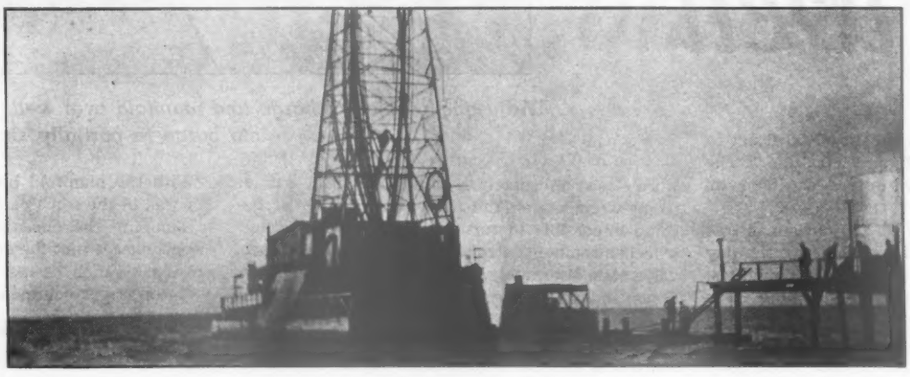
From the bottom of the Patton "stinger" to the top flange, the manifold measured 30 feet. From the bottom of the "stinger" to the top flange of the valve it was 23 feet. Wings measured 14 feet from tip to tip. Total weight assembled was 24,680 pounds.

The well-head, free of the swage, and extending 3 to 4 feet above the water, depending upon the tide, consisted, at this stage, of the 13⅜-inch surface casing and the 9⅝-inch producing string connected by a bradenhead. The annular space between the strings had been filled with cement under pressure during the previous attempt to control the well. The standard size casing clamp used in the previous attempt remained on the surface casing just below the collar.

The barge carrying the Patton truck and the new manifold assembly was moved to the well on June 19, and within five minutes the bottom of the manifold was manouvered over the gas stream, and the gas stream directed through the manifold with gates open. The horizontal position of the manifold was controlled by adjusting the position of the barge, while the vertical elevation of the manifold was regulated by chain hoists and by sinking of the barge, accomplished by siphoning water into the barge to the point of equalization and then filling the barge with water pumped from the boiler barge.

Halliburton trucks were connected to the lower wing of the 4-inch side connection by a steel hose for killing the well. The manifold was plumbed

by moving the sled of the "A" frame supporting the manifold forward with the truck winch line. The manifold was buckled down with five sets of turnbuckles and chains. A leak, however, remained between the Patton "stinger" and the bradenhead which tightening of turnbuckles failed to eliminate, so further work was stopped until a special leak clamp could be made. This took until June 21. In addition a specially designed capping overshot was provided. Examination of the Patton "stinger" on the bottom of the manifold revealed it to be badly grooved by sand cutting just above the bradenhead so no attempt was made to use the leak clamp. Instead it was decided to remove the manifold. The barge holding the assembly was raised by siphoning and jetting. The friction hold between the "stinger" and the casing was so great that work of loosening it required until June 23. Removal of the "stinger" and its flange bottom from the manifold, and removal of bolts from the bradenhead required until June 30. The top part of the Rector head was allowed to blow away.



Drilling barge snubbed off well

Quoting from the engineer's report:

"A special spool was designed by Rector to fit the bottom 9⅝-inch spool on the manifold and the bottom of the Rector head, which was type H-6000-pound test. The bottom part of the Rector head was repacked with hydraulic packing, the special Rector spool was flanged to the Cameron spool on the manifold and the manifold was placed over the well and flanged to the Rector head. The hydraulic packing in the Rector head blew out. The manifold was removed from the well and the Rector head repacked with hydraulic packing. The manifold was flanged to the Rector head again and the packing blew out for the second time.

"The Rector spool was brought to the American Iron Works at New Iberia which cut an A.P.I. ring groove in the bottom flange of the spool. The Cameron Iron Works made a special steel ring with a transition from the A.P.I. groove in the bottom of the Rector spool to the square groove in the bottom of the Rector spool. The Rector spool was again flanged to the bottom spool of the manifold. The special ring cost $36.50.

"On July 1 the manifold was placed over the well and the barge sunk on bottom. The manifold was flanged to the Rector head and this time the connection held with only a small leak at the point of connection. The extra heavy casing clamps were installed on the 13⅜-inch casing July 2.

"On July 3 the manifold was tied down with four 2-inch tie rods and two of the 4-inch connections were closed. The well blew through the two remaining 4-inch side connections out the 4-inch vent lines previously laid and also out of the top of the manifold. Two additional vent lines were laid 500 feet from the well on this date.

"On July 4 risers were erected on all vent lines and anchored to the bottom of the bay. Twenty 12-inch screw anchors (telephone type) were used to bury the risers.

"It was thought that during the process of capping the well the top collar on the 13⅜-inch casing against which the casing clamps were strained might have become weakened. Therefore a ring one-half inch thick by 3 inches wide was electrically welded on the 13⅜-inch casing about 3 inches below the collar. During this welding a hole was burned in the 13⅜-inch casing, so another ring one-half inch thick by 6 inches wide was welded over the previous ring and the collar. The special casing clamps were then fitted and strained against these rings.

"The small leak which remained around the Rector head was stopped with litharge and glycerine. Three quarts of glycerine and 7 quarts of litharge were mixed to a paste. A Cameron high pressure pump forced 1 gallon of glycerine into the well, the paste was pumped next and was followed by water. Pump pressure was exerted to 2,500 pounds per square inch and the leak was completely shut off.

"Weakness of the casing from sand cutting, vibration, and strain was considered possible and as a precaution it was decided to put a large cement block around the casing. A box 4 feet 10 inches square inside and 8 feet deep was built around the well and settled on the bottom of the bay. Using 2-inch pipe, a hole having the dimensions of the inside of the box was jetted around the 13⅜-inch casing to a depth of about 35 feet below the bottom of the bay on July 8. On July 9 Halliburton pumped 650 sacks of cement into the hole and box around the casing. The top of the cement was left level with the bottom of the collar on the 13⅜-inch casing, enclosing the casing clamps and lower ends of the tie rods in the cement. The cement set until July 12 when the Cameron control valve was closed and the well blew through four 4-inch vent lines from the four 4-inch side connections.

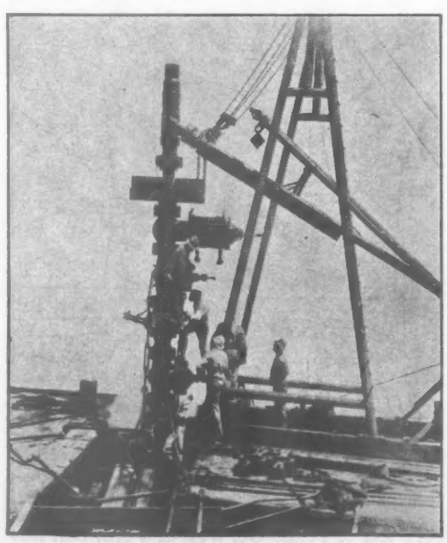
"Using a spring gauge on the manifold, pressures on the well head under various conditions of the flow were noted by Mr. Blackstop of Texas Co. as follows:

Openings—	Well-head pressure (lbs. per sq. in.)
Four 4-inch	840
Three 4-inch	1,050
Two 4-inch	1,450
One 4-inch	2,200

"On July 16 Texas Co. compounded two 18-inch Ideal pumps into one 20-inch Ideal pump. Halliburton's two trucks were compounded and each outfit pumped water from the bay into the side connections of the well head. Texas Co. used the top wing and Halliburton used the lower wing. One 4-inch connection was left open as the pumping started. Using a remote control stem 80 feet long, the 4-inch gate valve was pinched as pumping proceeded. The pressure on the well-head rose to 2,900 pounds per square inch, but the well was taking more water than was blowing out the partly opened 4-inch valve. Pinching of the 4-inch valve progressed slowly until it was closed, pumping water into the well continuously during the gradual closing of the valve. One hour after the closing of the 4-inch valve, pumping water had reduced the well-head pressure to 1,000 pounds per square inch. Occasionally the 4-inch valve was opened to bleed off gas trapped in the water in the casing. Twenty-eight hundred sacks of Baroid were then pumped into the well.

"On July 17 2,000 sacks of Baroid and 30 bales of Fibrotex were pumped into the well. Although the well showed no pressure the formation kept absorbing fluid.

"July 19 2,500 bbls. of rotary mud were received by barge, 1,000 bbls. from Houma, and 1,500 bbls. from Bateman Lake. Sixty bales of Fibrotex, one ton of cotton seed hulls and one ton of sawdust were mixed with this mud and pumped into the well, filling up the casing. The formation on July 28 was absorbing and at the rate of 3 or 4 bbls. per day which was being replaced daily."



Securing manifold to casing with chains and turnbuckles

The well was killed on July 17, after blowing wild since June 3. Total production during that time is estimated at 12,000,000,000 feet of gas. The well is temporarily abandoned, although attempts may be made to recover the 2⅞-inch drill stem. It was estimated by Department of Commerce engineers that the blowout cost $150,000, exclusive of gas lost. That cost included fees to well fighters, formation filling material, cement, Halliburton trucks and crews, marine equipment, manifolds, labor, damage and loss in drilling rig and equipment. The loss in gas estimated at 3 cents per thousand fee for the 12,000,000,000 feet would amount to $360,000.

In view of the marine location, transportation facilities required in fighting the blowout are of particular interest. This equipment included an amphibian plane, capable of carrying a pilot and three passengers, an eight-passenger speed boat, an 18-passenger speed boat, three luggers of 17, 11, and 11 tons, respectively, one 60 hp. tug and a 75 hp. tug.

References

1. Reid, Walter, Open-Flow Determination of Gas Wells: Western Gas, November, 1929, p. 15.
2. Back-Pressure Data on Natural Gas Wells and Their Application to Production Practices: Bureau of Mines, Monograph 7, by E. L. Rawlins and M. A. Schellhardt, p. 128.

Oklahoma City Dolomite Wells Decline Rapidly

BY HARRY SIMONS

Operators in the Simpson dolomite section of the Oklahoma City field are facing two problems, rapid decline of their wells and the ever increasing encroachment of salt water. Future drilling and the continued operation of these properties will depend naturally on the profit obtained and producing companies are going to be forced to keep down expenses and exercise all their ingenuity to make their properties pay.

Nearly all of the wells are located in Section 15-12n-3w, just north of the Oklahoma State Capitol but three wells have extended the field to the west into Section 16. At the present time the Imperial Oil Co. is drilling on the No. 1 Bell in the SW NW NW of Section 15 and if it is a well the field will be extended a quarter of a mile to the north.

Production is from the Simpson dolomite found from 6,380 to 6,450 feet, the pay section being about 125 feet thick. However, a complete picture of the situation should include the territory to the southeast (shown in map) in which the wells are producing from the Wilcox sand at depths from 6,452 to 6,481 feet. It is obvious that the Ordovician formations are dipping to the northwest and the encroachment of the water is from this direction. Wells in the Wilcox section were threatened with complete flooding until the territory to the north and west of them started producing, after which the water stopped increasing. It has remained at its present quantity for nearly a year and operators in the Wilcox area are undecided as to whether this is merely coincidence or is the result of so much water being removed by the dolomite wells.

These wells are completed with rotary after setting pipe, the general procedure being to wash them in with water, followed by oil. Very little trouble is experienced in getting the wells to flow as there is ample pressure at completion time. The dolomite responds readily to acidization and nearly all of the wells in this section have used large amounts, varying from 5,000 to 10,000 gallons. The amount of oil varies, one of the 10 wells studied having an initial potential of 1,210 bbls. in 24 hours and another 118 bbls. in 24 hours.

Production starts to decrease shortly after completion and water appears in ever increasing amounts as long as the wells flow naturally. Frequently the water reached 60 per cent of the total fluid from the well. Installation of pumps generally reduces the amount of water as time is then allowed for partial gravimetric separation of the fluid. However, production continues to decline.

A great many of these wells have had several work-over jobs since completion and most operators are leaving the rotary rigs used to drill the wells rigged up for several weeks after production has started in anticipation of having to go back and either drill deeper to increase production, clean out, or plug back. This means a greater expense charged against the well as the idleness of high priced rotary machinery is costly.

Production in this field is uncurtailed because of the water situation and the small amount of oil involved. The allowable of any month is the production of the preceding month. Production during the month of August was only 73,071 bbls. against 94,294 bbls. for June. If the field continues to decline as it has over the past three months, this area will be practically in the stripper class within a very short time.

Two tables, one showing the production for the past three months and the other the completion data for 10 wells sum up the facts. These 10 wells comprise over one-third of the total production in this area and are scattered over the entire field. They give a good cross section of the pool.

Only three wells produced their allowable during any of the months studied, and two of these

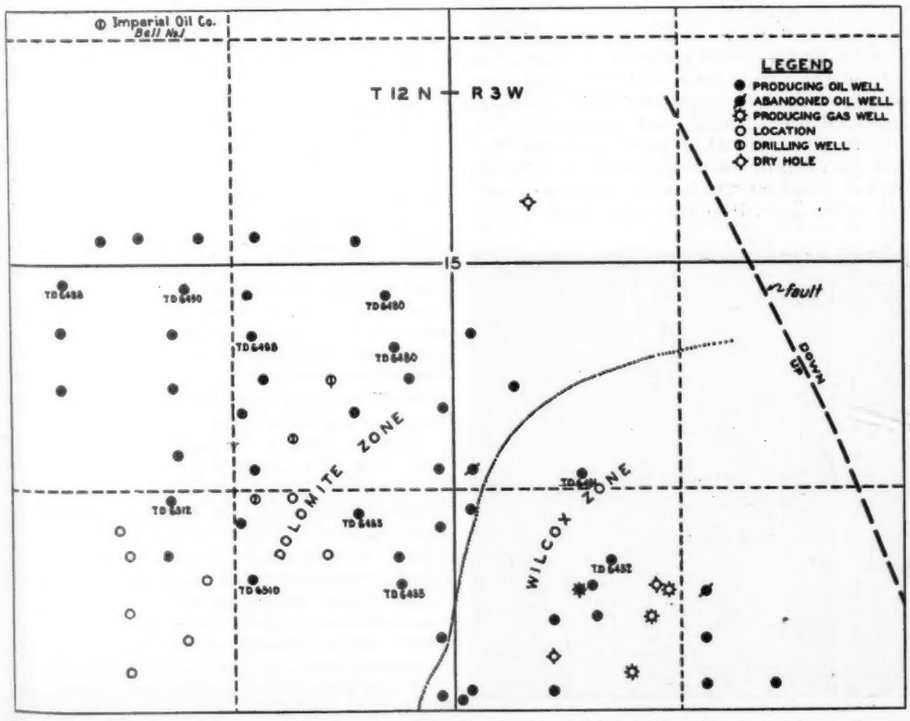
(Continued on Page 62)

TREND OF OIL PRODUCTION FROM 10 WELLS

Well—	June Allowed (bbls.)	June Produced (bbls.)	July Allowed (bbls.)	July Produced (bbls.)	August Allowed (bbls.)	August Produced (bbls.)	Decline (per cent)
A	8,250	6,409	9,300	4,441	4,441	3,253	60
B	998	681	704	476	476	393	60
C	2,064	2,064	2,456	2,456	2,456	1,619	21
D (2 wells)	16,500	4,275	18,600	5,986	5,986	3,893	76
E	8,250	3,281	4,906	4,906	4,906	3,753	54
F	8,250	269	278	157	157	130	98
G	8,250	4,464	4,613	1,997	1,997	1,265	84
H (2 wells)	12,641	13,671	17,570	17,437	18,600	11,546	8
I	874	377	390	215	275	275	66
Total	66,077	35,428	58,817	38,071	39,294	26,127	Av. 58

COMPLETION DATA ON SAME WELLS

Well—	Completed	Total depth (ft.)	Pipe Depth (ft.)	Pipe Size (in.)	Potential initial	Pay formation	Top (ft.)
A	5- 4-38	6,510	.....	.....	837 bbls./24 hrs.	Dolomite	6,385
B	7- 2-37	6,455	6,371	7		Dolomite	6,405
C	3-29-37	6,480	6,465	7	424 bbls./24 hrs.	Dolomite	.....
D	8-17-37	6,480	6,375	7	297 bbls./24 hrs.	Dolomite	
E	7-13-37	6,455	6,371	6⅝		Dolomite	6,373
F	3-13-38	6,512	.....	.....	1,210 bbls./24 hrs.	Dolomite	6,402
G	3-24-38	6,454	6,355	6⅝		Dolomite	.....
H	3-29-38	6,488	6,390	6⅝		Dolomite	6,378
	6-14-38	6,520	6,424	6⅝		Dolomite	6,410
I	3- 9-38	6,450	6,358	6⅝	118 bbls./24 hrs.	Dolomite	.....



Plat showing location of wells in the Oklahoma City dolomite field located mostly in the SW quarter of Section 15-12n-3w, Oklahoma County

WRINKLE BENDING

A total bend of 35 degrees was obtained with 13 wrinkles

Two operators heat a narrow band at right angles to the pipe, preparatory to bending

"Wrinkle bending," consists in heating with the oxyacetylene flame one or more narrow bands at right angles to the pipe and extending about half way around the pipe. The pipe is then bent either by hand or by means of a tractor or bending rig until the heated sections buckle sufficiently to give the pipe the desired curvature.

As a rule, each wrinkle is used to produce only a slight change in direction of the pipe. When the bend is more pronounced a series of wrinkles are used to give an easy flow, long sweep bend. The wrinkles project outward, thus providing a full opening throughout the bend. The method has found its greatest favor in mountainous country where, obviously, the greatest amount of bending is necessary, and where cold bending is difficult to handle because of the rough terrain and heavy equipment required.

Wrinkle bending is applicable from the smallest to the largest size pipe, according to "Oxy-acetylene Tips." Excellent results have been obtained on 4- and 6-inch pipe and equally good results have been obtained on the larger sizes ranging all the way up to 22-inch. The method is adaptable to both heavy wall and light wall pipe and can be performed in the shop as easily as it can be in the field.

The advantages of wrinkle bending are many. It is particularly important that the pipe wall never be reduced below the original thickness. On the contrary, compression squeezes the pipe so that the metal at the wrinkle is actually slightly thicker than the original wall. The metal on the outside of the bend opposite the wrinkle retains its original thickness.

Wrinkle bending lends itself readily to correction, since too much bending in one or more wrinkles may be corrected simply by reheating and applying a reverse pull or sag. Furthermore, the pipe is not stressed as in cold bending because the bend takes place only at the point where the steel has been softened by heating. The facility with which bends are formed makes for the ready fabrication of gradual or long sweep bends that are so desirable in overland pipe line construction.

Another important feature of wrinkle bending is its low cost. Equipment costs, labor costs and materials costs are all low. Also, the method permits bending even before the ditch is cut. Wrinkle bending fits in very well with the all-position or stab-on methods of welding.

Large degree bends even up to 180 degrees are readily fabricated by wrinkle bending. These may be made in the shop and then fitted on the job. Pumping station piping equipment is an example of this type of work.

Again, where the terrain is very rough and the pipe size very large, wrinkle bending can be carried out adjacent to the railroad siding where the pipe is being unloaded. The bent sections are then hauled out by the pipe stringing trucks and placed where needed. This is of special value in composite construction.

As a rule, only one oxyacetylene blowpipe is required for pipe under 6 inches. The large capacity blowpipes designed for heavy heating operations are particularly suitable for wrinkle bending. Additional equipment consists of either a manifolded supply of dissolved acetylene, or an acetylene generator, and a supply of oxygen. Usually, both gases are hauled along the right of way on a sled. Trained welding operators are not required, as the process involves only a simple heating operation.

In field fabrication, the bending or laying foreman decides where a bend is necessary. This may be a side bend, sag bend, or overbend. If the pipe is of small diameter, 6-inch for instance, no additional bending equipment is necessary. The section of pipe is laid on skids across the ditch and the foreman marks the point at which the pipe is to be bent. The heaters, standing on each side of the pipe, then proceed to apply heat to this point around approximately one-half to two-thirds of the upper circumference of the pipe. The band of heat should be 2 to 3 inches wide at the top of the pipe and should taper down to zero on the two sides. The pipe should be heated to a bright red.

The heated section is made to wrinkle by two men in the center operating a winch

When the pipe is at the correct temperature, the section should be rolled over quickly so that the heated portion is on the underside. At the same time, one of the pipe gang should throw the skid on the end of the pipe which is resting in the ditch. This man should then press, if necessary, on his end of the pipe while the other end is being held securely by two additional men. The weight of the pipe itself is usually sufficient to form the wrinkle, and the man in the ditch often finds his chief work in holding the sagging pipe to the requirements of the bend.

This operation is repeated until sufficient wrinkles have been formed to give the required bend. In general, a wrinkle of 5 to 7 degrees should be the maximum.

Two blowpipes should be used for pipe 6 inches in diameter and over. Also, additional bending equipment is necessary if the pipe is large or lying alongside the ditch or on the ground prior to ditching. A tractor, A-frame or bending rig can be used. If a tractor is used, it should be equipped with a stiff leg. The tractor should run part way onto the timbers which hold the pipe in place, the stiff leg set in position, and the chain block attached. The chain block in turn is fastened to the pipe. The pipe should then be heated in the usual manner with the two blowpipes and, when the proper heat is reached, the free end should be pulled up by means of the chain block.

Another method for handling this type of work is to use a tripod or A-frame equipped with block and tackle. One end of the pipe should be temporarily anchored, the heat applied, and the free end then hoisted to form the wrinkle. Still another method using the same equipment is to hoist the pipe first, place one or two men at one end to steady the pipe, and one or two men at the other end to press down. Heat is then applied on the underside of the section, and the wrinkle is formed by the weight of the pipe.

If the pipe is of the usual low carbon type, the bend can be arrested at any time by sudden cooling with water. However, this practice is not recommended for high strength pipe.

Progress in METALS

By W. L. NELSON

Extreme Size of Drill Collars Makes Heat Treatment Difficult

To say that deep drilling has made the oil industry alloy steel conscious is to tell only half the story. Meeting drilling requirements has made it necessary for equipment manufacturers to learn much about both the selection of steel and its fabrication. Some of their findings are of more than ordinary interest. They contain valuable suggestions for other lines of endeavor where similar problems may be normally, or unexpectedly met.

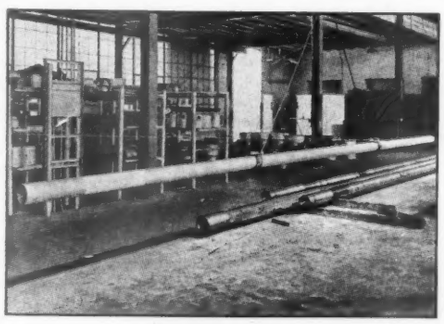


Fig. 1—Drill collar 30 feet long and 5 3/4 inches in diameter made from S.A.E. 4140 steel

For the benefit of the uninitiated, a drill collar is a steel forging, machined and drilled to desired dimensions, which is inserted in the drilling string between the drilling bit and the drill pipe. The sizes of drill collars vary, but may be as long as 60 feet and have an outside diameter of as much as 11 inches. There are two reasons for making a drill collar large. It has been found that the insertion of a rigid, heavy member between the drilling bit and the relatively flexible drill pipe makes for straighter drilling. Second, this particular part of the string is most subject to a combination of heavy torsion and compression loads.

The Baash-Ross Tool Co. of Los Angeles uses among other alloy steels, chromium-molybdenum steel. Experience has shown that this steel develops adequate physical properties, that is, good tensile and fatigue strength, and high impact strength, at relatively high hardness. The response to heat treatment is excellent; hardness and strength are uniform throughout heavy sections. The steels are not susceptible to temper brittleness. Finally the conditioned forging machines easily. This factor is important for as much as 2 tons of metal may be removed during the course of finishing the collar, which includes turning the outside diameter to size, and drilling the circulation hole, which may be as large as 5 inches in diameter, the entire length of the bar.

Developing an effective heat treating procedure for the collars required some ingenuity because of their bulk. For example, one collar was made from steel of the following analysis:

	Per cent
Carbon	0.34
Manganese	0.66
Silicon	0.27
Chromium	1.06
Molybdenum	0.30

The overall length was 46 feet, and the diameter varied from 11 to 8 inches, with a 3½-inch circulation hole. The rough forging weighed approximately 16,000 pounds, and the finished collar about 12,000 pounds.

In another case the collar was made from S.A.E. 4140, the analysis being:

	Per cent
Carbon	0.42
Silicon	0.24
Manganese	0.74
Chromium	1.10
Molybdenum	0.20

In this case the collar was 30 feet long and the diameter when finished, 5¾ inches. Developing a procedure for producing the required physical properties in bars of steel of such size is not simple.

After the steel is made, quality control continues with forging. The ingot is forged to a block, which is subjected to close inspection. After all defects are removed by chipping, the block is slowly brought up to forging temperature (2,150°-2,200° F.). The length of the bars makes it necessary to reheat them several times before they are finished. During forging the bars are not worked below 1,600° F., a close check being maintained by means of a pyrometer. However, the unavoidable temperature variations during forging make heat treating necessary to insure uniform structure and physical properties throughout the length of the bar. This procedure consists of a special normalizing treatment in a 65-foot furnace, which conditions the bar over its entire length. The treatment and the necessary equipment was developed through the joint efforts of the Earle M. Jorgensen Co., Bethlehem Steel Co., James B. Knapp Co., and Baash-Ross Tool Co., all of Los Angeles.

The furnace for conditioning the forging is of the gas-fired car type. The hearth is slotted so that it not only provides adequate support for the bar, but also permits the transfer of heat to the bottom by convection. The car is handled in and out of the furnace by a motor-driven drum puller, that completes its travel in or out in two minutes. Uniform furnace temperature is obtained by the method of locating and controlling the burners. The furnace is fired through 44 burners which are arranged in two banks, one on each side of the furnace. The burners in each bank are subdivided into groups of four, each group having an individual manifold, mixer and control system. The control is automatic and is set to compensate for maximum variation of 15° F. in the furnace temperature.

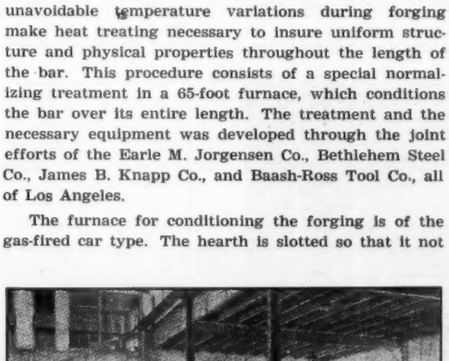


Fig. 2—Forty-six-foot drill collar partially machined

The conditioned forging is then machined and bored. After machining, the ends are further treated by oil quenching and drawing to a Brinell hardness found most suitable for the service required. During this heat treatment the bars are continuously rotated, which insures uniform treatment and eliminates straightening. Altogether, the combined heat treatments produce a finished collar which insures maximum serviceability.—Reprinted in the main from the Moly Matrix.

Treatise on Sucker-Rods

A story of sucker-rod manufacture from mill to well was recently published by the Axelson Manufacturing Co. Although all phases of manufacture and selection are discussed, one topic, namely, "Proper Use and Handling of Sucker-Rods and Couples," is particularly impressive. The circumstances under which rods are received and installed in the field are conducive to carelessness. This is unfortunate because metallographists are fully aware that kinks, bends, nicks in the surface, or corrosion may greatly shorten the life of the rod.

"It is important when unloading the rods that they are carefully removed from the truck and carefully laid down. Under no circumstances should they be dropped or pushed off the truck. Illustrative of careless rod handling is the following: A major oil company recently had some serious trouble with a string of rods due to breakage. Upon checking into the matter, it was found that at the time the rods were unloaded the driver had insufficient help. Consequently he backed the truck to the derrick, wrapped a chain around one end of the bundle of rods and attached the other end of the chain to the derrick leg. He then drove the truck out from under the rods. Before the truck was completely clear of the rods they were allowed to sag in the middle and were permanently bent at that point. A number of the rods on the outside of the bundle had been kinked and nicked near the forged area due to the tension placed on the chain to drag the rods from the truck. The pins on the other end had been bent by the force of dropping and had been nicked as a result of the pin ends hitting together."

Metallurgical Terms

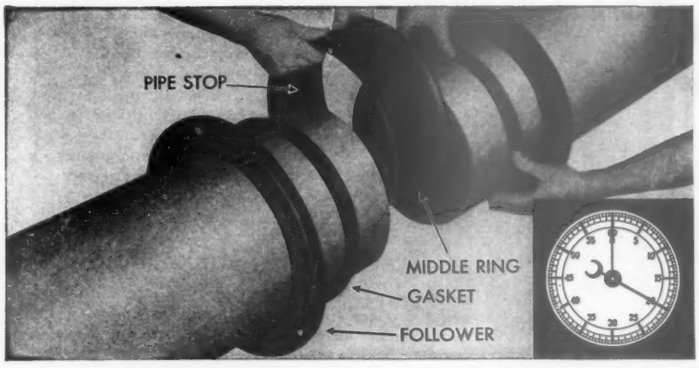
Nitriding and Nitralloy

Nitriding is the name given to the process of case-hardening by the use of nitrogen. The process consists essentially of subjecting machined and heat-treated parts to the action of nitrogenous materials such as ammonia gas, which results in an extremely hard surface which does not require further heat treatment.

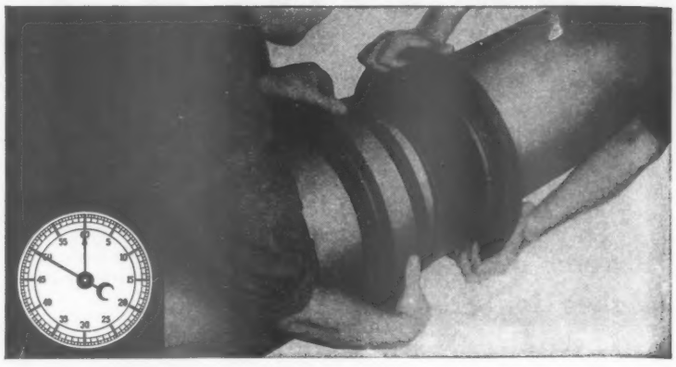
Some steels are more suitable for nitriding than others and these steels have been given the trade name of Nitralloy by the Nitralloy Corp., which controls the patents by which nitriding may be practiced and the sale of the special Nitralloy steels. Most of the special nitriding steels contain 0.9 to 1.5 per cent of aluminum and may contain other elements such as chromium and molybdenum in small amounts to improve the general properties of the stock.

One of the main advantages of nitriding over the common case-hardening process of carburization, is the fact that heat treatment is not necessary after the case-hardening operation. Carburized articles often warp or distort during the heat treating operation and do not possess as hard a surface as nitrided articles. Nitrided materials are also more resistant to atmospheric and fresh-water corrosion than regular case-hardened steel. The remarkable surface hardness of 900 to 1,200 Vickers-Brinell may be attained.

SPEED UP*

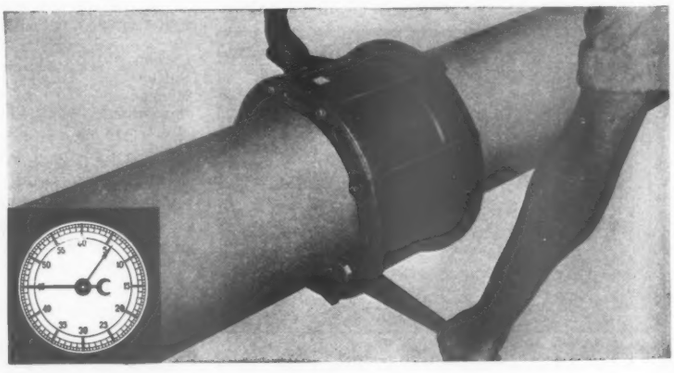


20 SECONDS—STEP 1! Dresser followers and gaskets have been placed over plain-end pipe (12" ID). Middle ring goes on next; note inside pipe-stop. With Dressers, no time is lost due to tedious lining-up of pipe-ends or other complicated "getting-ready" steps.



AT 50 SECONDS—STEP 2! Pipe-ends have been shoved "home" against middle-ring pipe-stop; gaskets and followers are then brought up. With Dressers, no one step holds up others. No workmen interfere with one another. Each has full-time job. No delays getting tests.

AT 2 MINUTES, 25 SECONDS—STEP 3! Bolts are inserted and nuts run up finger-tight. With Dressers, the small, well-bunched crew is always "up" with ditcher (reducing supervision problems). No "lag" between laying and jointing. No long trench length need be kept open.



AT 6 MINUTES, 45 SECONDS—FINAL STEP 4! Nuts are wrenched up tight. Jointing with Dressers is quickest part of job—can be done only in one way, i.e., permanently tight the first attempt every time! Flexibility gives top speed with straight pipe on many curves.

5.2 MILES IN 11 HOURS! That was the record set on this Dresser-coupled 5½" OD line in Texas. Assembly with Dressers is "straight-line"—economical from several points, *enabling additional labor to be added easily*. Wet ditches, rain, snow, muck, wind, swamps, even darkness, etc., cannot seriously retard progress.

LOCATION	SIZE OF LINE	RECORD	REMARKS
Southwest Texas	5½-in. OD	5.2 miles in 11 hrs.	Dawn-to-dusk. "Green" labor used.
Auburn, N.Y.	10-in. ID	4,640 ft. in one day	Going toughest in 13 states. Swamps, quicksand, and water.
Ontario, Canada	10-in. ID	52 miles in 50 days	Undulating terrain. Line completely buried without pressure test.
Cincinnati, Ohio	12-in. CIP	1,312 ft. in 9½ hrs.	Cast-iron pipe and couplings, requiring care in handling and lowering.
Buffalo, N.Y.	36-in. ID	680 ft. in 8 hrs.	First day's work by gang of "pick-up" relief labor, totally unfamiliar with pipe laying.
Ft. Wayne, Ind.	42-in. ID	400 ft. in 8 hrs.	Laying crew of only 10 men had to wait for trencher on almost every pipe length.
Birmingham, Ala.	60-in. ID	3,040 ft. in 8 hrs.	WPA labor; includes all work except small part of backfilling, and testing.

TYPICAL SPEED RECORDS. See Table above. Assembly time per Dresser joint may be safely estimated as follows: 4": 3 min; 6" & 8": 5 min; 10" & 12": 7 min; 14": 8 min; 18": 10 min; 20": 12 min; 24": 14 min. (Two boltmen—all jointing operations after stringing. Based on time studies. For other sizes, figure 2 man-minutes per bolt).

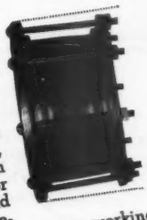
Your Pipe-jointing!

(Cutaway view of Dresser Coupling, Style 38)

*** SPEED . . . .YES! ALSO:**

1. **PERMANENT TIGHTNESS**—proved for 50 years, on 150,000 miles of pipe.
2. **FLEXIBILITY**—expansion, ground movements, vibration, lowering stresses, etc., are absorbed. Many curves, grades, etc., made with straight pipe.
3. **SIMPLICITY**—standard parts are assembled on plain-end pipe by unskilled labor, using only a wrench under almost any weather or ditch conditions.
4. **STRENGTH**—predetermined; joints safely withstand any specified pressure.
5. **TRUE ECONOMY**—a truly lower joint cost throughout life of line, plus salvage.

Reducing connections between plain-end steel and/or cast-iron pipe of different outside diameters are easily and quickly effected with Dresser Reducing Couplings, Style 62, furnished in two types—Type 1 for small reductions and Type 2 for large reductions. Each employs same working principle shown in cutaway above.

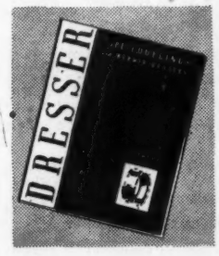


When your plans are all made—when an absolute dead-line or time penalties have been set—when the pipe line must be completed on schedule to get revenue started or to avoid delaying other parts of the project—then you want a joint that *won't hold you up*—despite rain, snow, swamps, etc.

With "pace-setting" Dresser joints, you are *certain* of getting your line in as fast as you want.

The simple, *standard* Dresser parts permit smooth, steady, uniform speed—faster than the ditcher itself can travel—with no lost motion. No single, slow operation sets up a "bottleneck." Everything is coordinated—moves forward in unison like clock-work. Assembly both above the ditch (safe and practical *only* with flexible Dressers) or in the ditch is *measurably* speeded up.

Results: The length of line laid in a day is the actual length *completed.* Faster installation sharply reduces direct costs, overhead, and interest during construction. And all with the use of unskilled labor—plus joint tightness and flexibility proved for 50 years!



For further details, write for our General Catalog No. 36, a virtual handbook on pipe joints. ● S. R. DRESSER MFG. CO., BRADFORD, PA. *New York:* 17 East 42nd Street; *Chicago:* Peoples Gas Building; *Houston:* Shell Building; *San Francisco:* 1038 Polk Street; *In Canada:* Dresser Mfg. Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER
PIPE COUPLINGS

Recycling, Repressuring and Storing Natural Gas

By D. H. STORMONT

"The recycling of gas in gas-producing formations, the repressuring of and the maintenance of pressure in oil sands, and the storage of gas in depleted fields, are all procedures which may be properly classed as conservation measures." This statement was made by J. H. Dunn, chief engineer of the Lone Star Gas Co., Dallas, Tex., in his paper, "Recycling Gas. Repressuring Oil Sands, and Storing Gas in Depleted Fields, as Conservation Measures," delivered before the annual meeting of the American Bar Association at Cleveland, Ohio. An abstract of this paper follows.

The recycling of gas in gas-producing formations makes possible the recovery of hydrocarbon liquids that otherwise may be lost through condensation in the reservoir during the depletion of reservoir pressure. Repressuring and pressure maintenance increases total recoveries of oil and in addition provides for the saving of gas for ultimate commercial consumption. Gas storage in depleted fields is a process that may be used to provide a means of saving for ultimate consumption gas that otherwise would be wasted. It also offers the opportunity for the recovery of a portion of the hydrocarbon liquids that would otherwise remain in the reservoir at the time of abandonment.

EXAMPLE 1

	Five-year period	Ten-year period	Fifteen-year period
Daily gas production (M cubic feet)	2,000	2,000	2,000
Daily oil production (barrels)	1,000	1,000	1,000
Compression ratio	30	30	30
Station size (horsepower)	400	400	400
Cost of compression:			
Annual cost (dollars)	19,213	15,945	14,855
Daily cost (dollars)	52.64	43.68	40.70
Cost per barrel (cents)	5.264	4.368	4.070
Cost of injection well and pipe lines:			
Cost of well (dollars)	50,000	50,000	50,000
Cost of pipe lines (dollars)	10,000	10,000	10,000
Salvage value (dollars)	6,000	6,000	6,000
Present worth of salvage (dollars)	4,484	3,350	2,503
Total investment less salvage (dollars)	55,516	56,650	57,497
Annual cost (dollars)	12,879	7,547	5,823
Daily cost (dollars)	35.28	20.68	15.95
Cost per barrel (cents)	3.528	2.068	1.595
Total cost per barrel (cents)	8.792	6.436	5.665

EXAMPLE 2

	Five-year period	Ten-year period	Fifteen-year period
Daily gas production (M cubic feet)	5,000	5,000	5,000
Daily oil production (barrels)	500	500	500
Compression ratio	4	4	4
Station size (horsepower)	400	400	400
Cost of compression:			
Annual cost (dollars)	19,213	15,945	14,855
Daily cost (dollars)	52.64	43.68	40.70
Cost per barrel (cents)	10.528	8.736	8.140
Cost of injection well and pipe lines:			
Cost of well (dollars)	50,000	50,000	50,000
Cost of pipe lines (dollars)	10,000	10,000	10,000
Salvage value (dollars)	6,000	6,000	6,000
Present worth of salvage (dollars)	4,484	3,350	2,503
Total investment less salvage (dollars)	55,516	56,650	57,497
Annual cost (dollars)	12,879	7,547	5,823
Daily cost (dollars)	35.28	20.68	15.95
Cost per barrel (cents)	7.056	4.136	3.190
Total cost per barrel (cents)	17.584	12.872	11.330

TABLE 1—COST OF COMPRESSOR STATION INSTALLATION COMPLETE

Horsepower installed	Cost per horsepower	Total cost of installation
400	$125	$ 50,000
800	116	92,800
1,200	112	134,000
1,600	109	174,400
2,000	108	216,000
2,400	107	256,800
2,800	106	296,800
3,200	105	336,000
3,600	104	374,400
4,000	104	416,000

TABLE 2—FIXED CHARGES FOR AMORTIZING COMPRESSOR STATION INVESTMENT

In Five Years

Horsepower installed	Total cost	Salvage value (30% new)	Present worth of salvage	Total cost less present worth of salvage	Annual charge required to amortize investment
400	$ 50,000	$ 15,000	$11,209	$ 38,791	$ 8,999
800	92,800	27,840	20,804	71,996	16,703
1,200	134,400	40,320	30,130	104,270	24,190
1,600	174,400	52,320	39,097	135,303	31,390
2,000	216,000	64,800	48,422	167,578	38,877
2,400	256,800	77,040	57,569	199,231	46,221
2,800	296,800	89,040	66,536	230,264	53,420
3,200	336,000	100,800	75,324	260,676	60,476
3,600	374,400	112,230	83,932	290,468	67,387
4,000	416,000	124,800	93,258	322,742	74,875

In 10 Years

Horsepower installed	Total cost	Salvage value (25% new)	Present worth of salvage	Total cost less present worth of salvage	Annual charge required to amortize investment
400	$ 50,000	$ 12,500	$ 6,980	$ 43,020	$ 5,731
800	92,800	23,200	12,955	79,845	10,637
1,200	134,400	33,600	18,762	115,638	15,406
1,600	174,400	43,600	24,346	150,054	19,991
2,000	216,000	54,000	30,153	185,847	24,759
2,400	256,800	64,200	35,849	220,951	29,436
2,800	296,800	74,200	41,433	255,367	34,021
3,200	336,000	84,000	46,905	289,095	38,514
3,600	374,400	93,600	52,265	322,135	42,916
4,000	416,000	104,000	58,073	357,927	47,684

In 15 Years

Horsepower installed	Total cost	Salvage value (20% new)	Present worth of salvage	Total cost less present worth of salvage	Annual charge required to amortize investment
400	$ 50,000	$ 10,000	$ 4,173	$ 45,827	$ 4,641
800	92,800	18,560	7,745	85,055	8,613
1,200	134,400	26,880	11,216	123,184	12,475
1,600	174,400	34,880	14,554	159,846	16,187
2,000	216,000	43,200	18,026	197,974	20,048
2,400	256,800	51,360	21,431	235,369	23,835
2,800	296,800	59,360	24,769	272,031	27,548
3,200	336,000	67,200	28,041	307,959	31,186
3,600	374,400	74,880	31,245	343,155	34,751
4,000	416,000	83,200	34,717	381,283	38,612

Note: In calculating fixed charges, interest, and discount to present worth, an interest rate of 6 per cent per annum has been used. Interest has been computed only on the unamortized balance of the investment.

After this brief introduction the author discusses from the standpoint of practical conservation the results obtainable from the injection of gas into producing reservoirs under various conditions; the term "practical conservation" being defined as, "The operation of producing wells in accordance with proven and practicable methods which will enable the operator to recover profitably therefrom the greatest amount of recoverable oil and gas."

In discussing recoveries under present methods authorities are cited to substantiate the fact that oil recoveries to date have been universally low. Before the proration of production, oil fields experienced declines of from 60 to 66 per cent of peak production at the end of the first year after peak production had been reached. Three years after the peak production had been reached the decline, on the average, was over 70 per cent of the peak production. Individual fields have shown declines as great as 94 per cent of peak production in three years it is pointed out.

Few Similarities

Using Oklahoma City, Big Lake, Rodessa, Kettleman Hills and some of the Gulf Coast fields as examples, he points out a striking similarity from a physical standpoint is found when these fields are compared with the outstanding examples of superior operations exemplified by the Sugarland and Tepetate fields. In each of the poorly developed fields results of the poor production practices are described and the fact that in each of the former fields there existed the physical opportunity to have accomplished results similar to those actually being obtained at Tepetate and Sugarland.

"It is believed that the cost of returning gas to the reservoir for any one of these fields operated on a scientific basis would not have exceeded on the average 5 cents per barrel of oil produced. Compare that cost, or even a much greater cost, with the value of an increased recovery of 2 bbls. for one, or with present lifting costs in these fields which reach figures as high as 35 cents per barrel. Then consider the value of and conservation represented by the saving of the enormous volumes of gas that heretofore has been wasted. There is no better place to store gas for future consumption from the standpoint of conservation than in the same reservoir that originally held that gas."

For oil conservation, however, the return of gas to the producing formation is not so important in some fields as it is in others, he points out. Using the East Texas field as an example, he states the reservoir pressure could have been maintained if the rate of oil production had been made to conform with the rate of water movement. "But even in this field, if the gas produced

with the oil had been returned to the reservoir, it would have been of substantial assistance to the water drive toward the maintenance of reservoir pressures and would have made possible a greater ultimate recovery of oil. A further and substantial benefit in fields of this nature where the oil initially is under-saturated would be derived from the injection of the gas into the reservoir to thus prevent an increase in the surface tension and the viscosity of the oil, both of which are factors affecting recovery."

Under repressuring and pressure maintenance, several outstanding examples of the additional oil recovered under these practices are cited. These included the Cook field of Shackelford County, Texas, the Sugarland field located in the Texas Gulf Coast, and the Tepetate field of Coastal Louisiana.

Detailed cost estimates and tables giving pertinent information of the cost, capacities and compression ratios were made by the author and are included here. These were designed to give a general idea of the cost of injection under a wide range of conditions of pressures and volumes. In discussing cost of injection he states:

"Repressuring, pressure maintenance, recycling and gas storage are considered practicable as conservation measures if the benefits exceed the costs. Successful application of any of these processes will result only if the individual operator is required to stand a reasonable expense for his fair share of the benefits. Unitization is not a prerequisite for the successful operation of these proposed methods of increasing recoveries, but good business calls for a certain amount of coordination if not cooperation. There are problems in each field that are individual to that field. Arrangements, for example, must be made for the setting aside of certain portions of the reservoir to receive the gas in order that good engineering and operating procedures may be followed.

"The cost of compression is not the only expense incurred in connection with gas injection. Facilities must be provided for the transportation of the gas from the compressor station to the reservoir sand and this, of course, includes injection wells. With few exceptions the gathering of the gas on the inlet side of the compressor station is already being done for the purpose of gasoline extraction and any expense in connection with the gathering is not ordinarily chargeable to the injection procedure.

"Assuming that arrangements have been made whereby the operating procedure can be applied in a field where numerous operators are concerned (the working out of such arrangements will often be the major problem), it may be helpful to indulge in some calculations to indicate costs to be expected for various conditions.

"Consider the situation of an operator who has 2,000,000 feet of gas per day produced with an average gas-oil ratio of 2,000 feet per barrel, and where a compression ratio of 30 is required for injection. These assumptions are not out of line with conditions that exist in numerous fields today. This operator, working individually, can compress the gas for injection at a cost of 4.1 cents per barrel of oil produced on the basis of a 15-year life of the field, 4.4 cents for a 10-year life, or 5.3 cents per barrel for only a 5-year life. If this operator, acting individually, spends an additional $60,000 for transportation facilities, including an injection well, then an additional allowance must be made for this cost of 1.6 cents on the basis of 15-year life, 2.1 cents for a 10-year life, or 3.5 cents for a 5-year life, giving the total cost of injection as follows: Fifteen years, 5.7 cents; 10 years, 6.5 cents; or five years, 8.8 cents per barrel. (See Example 1 for detail). . . . .

"Consider next the situation of an operator who has 10,000,000 feet for injection with similar operating conditions as those outlined above. The cost per barrel of oil would then be reduced on the basis of 15 years amortization from 5.7 cents

(Continued on Page 62)

TABLE 3—DETAIL OF ANNUAL EXPENSE OF OPERATING COMPRESSOR STATIONS

Horsepower installed	Item A	Item B	Item C	Item D	Item E	Item F	Total operating expense
400	$ 6,570	$ 307	$ 698	$ 900	$ 810	$ 929	$10,214
800	6,570	613	698	1,800	1,503	1,118	12,302
1,200	12,264	920	1,304	2,700	2,177	1,937	21,302
1,600	12,264	1,226	1,304	3,600	2,825	2,122	23,341
2,000	12,264	1,533	1,304	4,500	3,499	23,10	25,410
2,400	12,264	1,840	1,304	5,400	4,160	2,497	27,465
2,800	18,834	2,146	2,002	6,300	4,808	3,409	37,499
3,200	18,834	2,453	2,002	7,200	5,443	3,593	39,525
3,600	18,834	2,759	2,002	8,100	6,065	3,776	41,536
4,000	24,528	3,066	2,607	9,000	6,739	4,594	50,534

Item A—Operating labor.
Item B—Lube oil (3,000 hp. hours per gallon $0.25 per gallon)
Item C—Compensation insurance (5.63% of payroll)
F. O. A. B. and Unemployment insurance taxes (5.00% of payroll)
Total Item C (10.63% of payroll)
Item D—Supplies and miscellaneous ($0.50 per hp.)
Maintenance ($1.75 per hp.)
Total Item D ($2.25 per hp.)
Item E—Fire and explosion insurance (0.24% of investment)
Ad valorem taxes (1.38% of investment)
Total Item E (1.62% of investment)
Item F—Overhead (10% of direct operating expenses).

TABLE 4—ANNUAL COST OF OPERATING COMPRESSOR STATION AND AMORTIZING INVESTMENT

Horsepower installed	Annual operating expense	Total annual fixed cost: Five-year period	Ten-year period	Fifteen-year period	Total annual cost: Five-year period	Ten-year period	Fifteen-year period
400	$10,214	$ 8,999	$ 5,731	$ 4,641	$ 19,213	$15,945	$14,855
800	12,302	16,703	10,637	8,613	29,005	22,939	20,915
1,200	21,302	24,190	15,406	12,475	45,492	36,708	33,777
1,600	23,341	31,390	19,991	16,187	54,731	43,332	39,528
2,000	25,410	38,877	24,759	20,048	64,287	50,169	45,458
2,400	27,465	46,221	29,436	23,835	73,686	56,901	51,300
2,800	37,499	53,420	34,021	27,548	90,919	71,520	65,047
3,200	39,525	60,476	38,514	31,186	100,001	78,039	70,711
3,600	41,536	67,387	42,916	34,751	108,923	84,452	76,287
4,000	50,534	74,875	47,684	38,612	125,409	98,218	89,146

TABLE 5—COMPRESSION STATION CAPACITIES IN MILLIONS OF CUBIC FEET OF GAS COMPRESSED PER DAY (ONE-STAGE)

Horsepower installed	Compression ratios: 2	4	6	8	10
400	9.763	4.945	3.612	2.892	2.403
800	19.527	9.889	7.224	5.784	4.806
1,200	29.290	14.834	10.836	8.676	7.210
1,600	39.054	19.778	14.448	11.568	9.613
2,000	48.817	24.723	18.060	14.460	12.016
2,400	58.580	29.667	21.672	17.352	14.419
2,800	68.344	34.612	25.284	20.244	16,822
3,200	78.107	39.556	28.896	23.136	19.226
3,600	87.871	44.501	32.508	26.028	21.629
4,000	97.634	49.445	36.120	28.920	24.032

Note: The compressor station capacities in millions of cubic feet per day for Table 5 and Table 6 were based upon Weymouth's formula which appears to the right of this table.

TABLE 6—COMPRESSOR STATION CAPACITIES IN MILLIONS OF CUBIC FEET OF GAS COMPRESSED PER DAY (TWO-STAGE)

Horsepower installed	Compression ratios: 10	20	30	40
400	2.925	2.263	1.936	1.735
800	5.850	4.525	3.871	3.470
1,200	8.776	6.788	5.807	5.205
1,600	11.701	9.051	7.743	6.940
2,000	14.626	11.314	9.679	8.675
2,400	17.551	13.576	11.614	10.410
2,800	20.476	15.839	13.550	12.145
3,200	23.402	18.102	15.486	13.880
3,600	26.327	20.364	17.421	15.615
4,000	29.252	22.627	19.357	17.350

TABLE 7-A—COST PER BARREL OF OIL FOR ONE-STAGE COMPRESSION OF INJECTED GAS 400 HP. STATION (10-YEAR AMORTIZATION)

Gas Injected M.C.F. per bbl. of oil	2	4	6	8	10
0.5	$0.0022	$0.0044	$0.0060	$0.0076	$0.0091
1	0.0045	0.0083	0.0121	0.0151	0.0182
2	0.0089	0.0177	0.0242	0.0302	0.0364
4	0.0179	0.0353	0.0483	0.0604	0.0727
6	0.0268	0.0530	0.0726	0.0906	0.1091
8	0.0358	0.0707	0.0968	0.1208	0.1454
10	0.0447	0.0883	0.1209	0.1511	0.1818
12	0.0537	0.1060	0.1451	0.1813	0.2182
14	0.0626	0.1237	0.1693	0.2115	0.2545
16	0.0716	0.1413	0.1935	0.2417	0.2909
18	0.0805	0.1590	0.2177	0.2719	0.3272
20	0.0895	0.1767	0.2419	0.3021	0.3636

TABLE 7-B—COST PER BARREL OF OIL FOR ONE-STAGE COMPRESSION OF INJECTED GAS 4,000 HP. STATION (10-YEAR AMORTIZATION)

Gas Injected M.C.F. per bbl. of oil	2	4	6	8	10
0.5	$0.0014	$0.0027	$0.0037	$0.0047	$0.0056
1	0.0028	0.0054	0.0074	0.0093	0.0112
2	0.0055	0.0109	0.0149	0.0186	0.0224
4	0.0110	0.0218	0.0298	0.0372	0.0448
6	0.0165	0.0327	0.0447	0.0558	0.0672
8	0.0220	0.0435	0.0596	0.0744	0.0896
10	0.0276	0.0544	0.0745	0.0930	0.1120
12	0.0331	0.0653	0.0894	0.1117	0.1344
14	0.0386	0.0762	0.1043	0.1303	0.1568
16	0.0441	0.0871	0.1192	0.1489	0.1792
18	0.0496	0.0980	0.1341	0.1675	0.2016
20	0.0551	0.1088	0.1490	0.1861	0.2240

TABLE 8-A—COST PER BARREL OF OIL FOR TWO-STAGE COMPRESSION OF INJECTED GAS 400 HP. STATION (10-YEAR AMORTIZATION)

Gas Injected M.C.F. per bbl. of oil	10	20	30	40
0.5	$0.0075	$0.0097	$0.0113	$0.0126
1	0.0149	0.0193	0.0226	0.0252
2	0.0299	0.0386	0.0451	0.0504
4	0.0597	0.0772	0.0903	0.1007
6	0.0896	0.1158	0.1354	0.1511
8	0.1195	0.1544	0.1805	0.2014
10	0.1494	0.1930	0.2256	0.2518
12	0.1792	0.2316	0.2708	0.3021
14	0.2091	0.2703	0.3159	0.3525
16	0.2390	0.3089	0.3610	0.4029
18	0.2688	0.3475	0.4062	0.4532
20	0.2983	0.3861	0.4513	0.5036

TABLE 8-B—COST PER BARREL OF OIL FOR TWO-STAGE COMPRESSION OF INJECTED GAS 4,000 HP. STATION (10-YEAR AMORTIZATION)

Gas Injected M.C.F. per bbl. of oil	10	20	30	40
0.5	$0.0046	$0.0059	$0.0069	$0.0078
1	0.0092	0.0119	0.0139	0.0155
2	0.0184	0.0238	0.0278	0.0310
4	0.0368	0.0476	0.0556	0.0620
6	0.0552	0.0713	0.0834	0.0931
8	0.0736	0.0951	0.1112	0.1241
10	0.0920	0.1189	0.1390	0.1551
12	0.1104	0.1427	0.1668	0.1861
14	0.1288	0.1665	0.1946	0.2171
16	0.1472	0.1903	0.2224	0.2482
18	0.1656	0.2140	0.2502	0.2792
20	0.1840	0.2378	0.2780	0.3102

WEYMOUTH FORMULA

$$I.H.P. = 0.08584\ Q_o\ T_s \frac{[1.08 + 0.5\ (1/r)^2]\ Log_e r}{0.97 - 0.03r}$$

Where:

Q_o = Millions of cubic feet of gas compressed per day at 14.73 pounds per square inch and 60° F.

T_s = Intake temperature in degrees F. absolute. (Assumed to be 520° F. abs.)

r = Compression ratio.

In actual performance the gas volumes set out will be increased in accordance with the effect of the deviation of natural gas from the law of perfect gases and liquefaction at the operating temperatures and pressures. Under high-pressure operation the station capacity may increase more than 25 per cent for the horsepower shown.

Widening the Scope of Gardner-Denver Pumping Service

GARDNER-DENVER 7¼ x 12 "FXZ" POWER PUMP

"FXZ" Divided Fluid Cylinder Power Pumps		
Maximum pressure for slush service	Size	BHP rating of pump at maximum speed
430	7¼ x 12	137.5
500	6¾ x 12	137.5
640	6 x 12	135.0
750	5½ x 12	133.0

- This pump is a valuable addition to the well-established line of Gardner-Denver Power Pumps. Manufactured in the sizes that make the "FXZ" just right for shallow drilling.
- Large capacity—yet light enough for unitized and portable drilling rigs—easy to handle, easy to move.
- Equipped with the latest type surge chamber—eliminates shocks—protects pump and rotary hose.
- May be driven by Diesel engine, gasoline engine or electric motor.
- Equipped with the same working parts that have been "field-proved" in the well-known line of Gardner-Denver "FX" Slush Pumps—Herringbone Gears, Duo-Seat Valves, Slush-proof Liners.

Complete information and operating data will be sent to you on request.

Continental Supply Co., Continental Building, Dallas, Texas; Wagner-Morehouse, Inc., 2371 E. 51st St., Los Angeles, Calif.; Republic Supply Company, 2122 East 7th St., Los Angeles, Calif.

GARDNER-DENVER

QUINCY, ILLINOIS

Since 1859

DALLAS · HOUSTON · KILGORE · TULSA · LOS ANGELES · SAN FRANCISCO · NEW YORK · CHICAGO · PITTSBURGH

OPERATING IDEAS

Handy Pipe Line Screw Jack

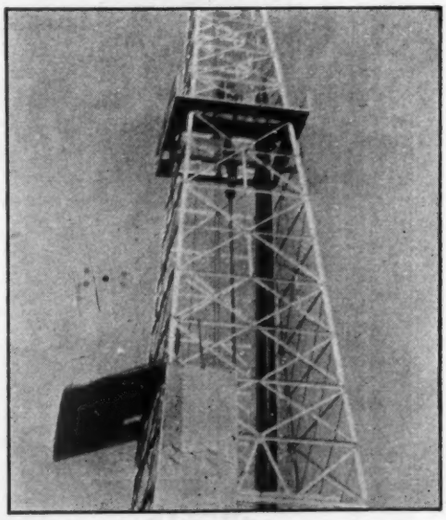
Pipe line men in a warehouse at Yoakum, Tex., designed the screw jack pictured for holding half soles against the line while repairing leaks. The base is made from an old piece of pipe molded to fit the particular size line. A chain attached to one side of the traveling plate is passed under the half sole and hooked on the opposite side. Turning the screw holds the half sole in position.

Hinged A-Frame for Pipe Line Construction

An A-frame has been fabricated by an eastern pipe line operator which is of welded construction that makes use of 1- and 2-inch pipe. The distinctive feature is a pivot at the top which makes it possible to set this in place at any angle desired. When being transported either by hand or by truck, this frame can be pulled together so that the two sides lay flat.

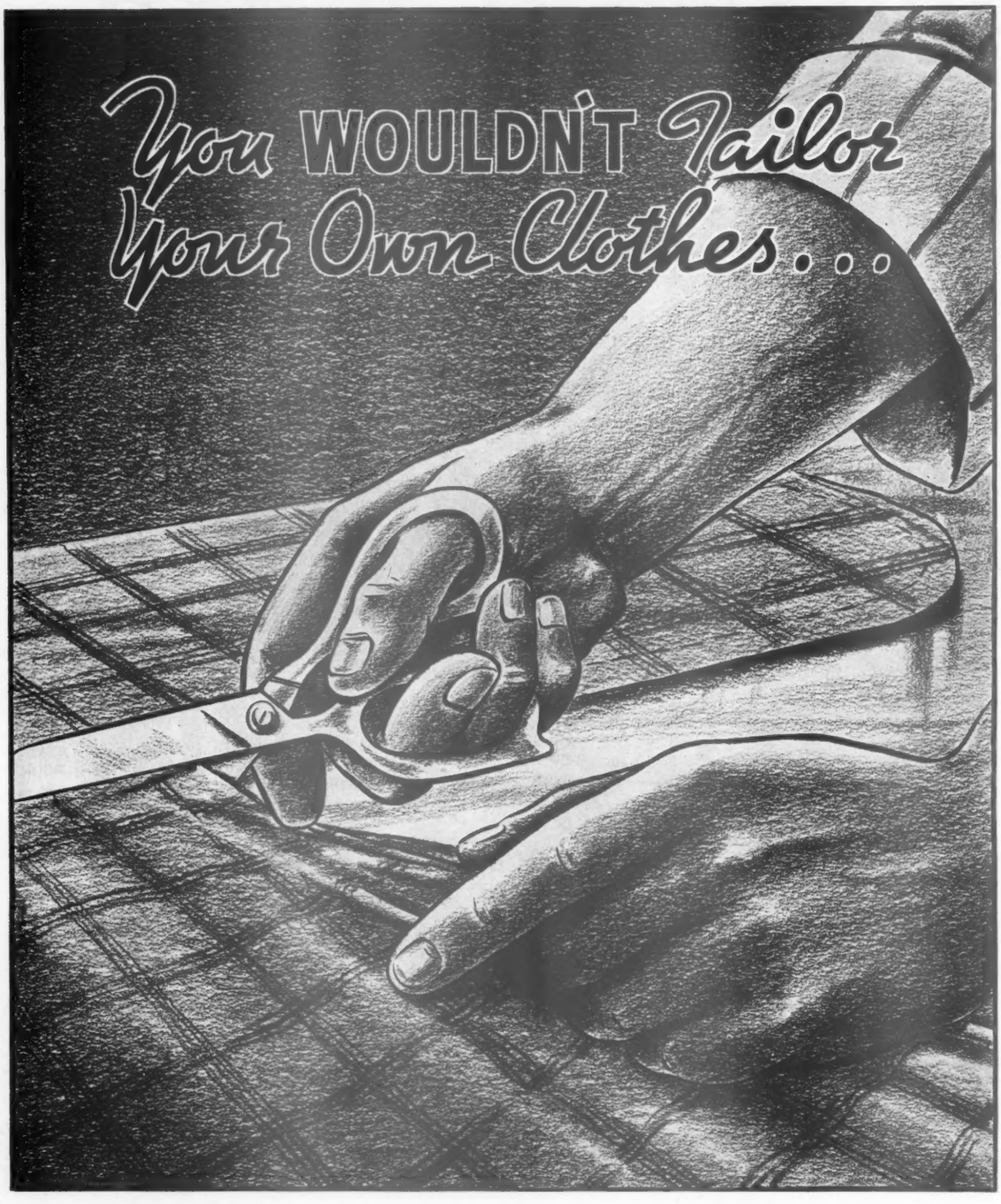
Guy Line Safety Guard Protects Trucks at Night

Guy lines from derricks, vent pipes, and separators are generally about five-eighths of an inch in cross section and are difficult to see, particularly at night. A man walking into one of them may receive an injury. Trucks sometimes become entangled with the guy lines, breaking them or pulling over the machinery they are supporting. To prevent this a major company erects safety guards around all guy lines on their leases. They are made from 1-inch lumber and guard the line to a height of 6 feet.



Sunshade Protects Men at Work

The sun beats down on the just and unjust alike in the Fox field in Carter County, Oklahoma. One drilling crew petitioned the toolpusher for some sheet metal and constructed these sunshades. The shade on the front of the derrick protects the eyes of the driller while making a trip in the forenoon. The one on the south side of the derrick is adjustable from the floor and protects the driller through the midafternoon. Another shade on the west side of the derrick keeps the drilling crew cool through the evening hours.



PROFIT BY USING Purchased ELECTRIC POWER

It would be impractical to tailor one's clothes, wouldn't it? Mainly, because it requires skill and experience to fashion and tailor a suit—one that you would take pride in wearing—one that would give you the greatest amount of service at the most reasonable cost.

Similarly, electric power has something in common with tailoring in that it is a highly specialized service, managed by skilled and experienced persons who know how to manufacture electric power at the lowest NET cost to you.

Your electric power company has many enlightening facts concerning the efficiency and low cost of purchased electric power. Ask to have one of their representatives give you these facts. Take advantage of this modern power—the power that provides maximum efficiency at the lowest NET cost.

PETROLEUM ELECTRIC POWER CLUB

Supplementary Barrel Ends Scale Trouble on Rods

By J. P. O'DONNELL

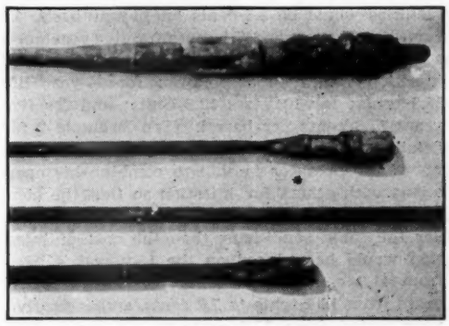
Corrosion of pumping equipment has always been a serious problem for operators in the Middle District fields of Pennsylvania. Since the introduction of air repressuring in these fields the problem has become more acute. The combination of the oxygen thus provided with the formation waters of heavy salt content has resulted in severe sucker-rod corrosion. Heavy depositions of scale have often caused plugging of the pumping parts.

These scale depositions have been so heavy in some instances that it is necessary to pull some wells as often as twice a week. In a laboratory analysis, this scale has been sifted readily through the finest mesh screen which shows its ability to enter and accumulate in the smallest of openings. Accumulations sometimes become so hard and compact that it is impossible to release the valves in the working barrel after the well has been pulled.

It is apparent that the mixture of air and moisture constitutes an ideal situation for developing corrosion. Effect of this corrosion has been much more severe on rods than on tubing, apparently because the protective hydrogen film of the former is disturbed by pulling operations so that the oftener wells are pulled the shorter becomes the life of the equipment and the faster the rate of corrosion.

Scale from the sucker-rods drops down the tubing and accumulates in the working barrel where it has been found to damage the working parts. In wells where corrosion is unusually severe this deposition of scale has been sufficiently heavy to render profitable operation impossible. As a consequence, operators in this district where production costs are already high, have been faced with additional costs for labor, interruption of production and replacement of equipment.

Scale removed from supplementary barrel in use for six months



Samples of corrosion on rods and traveling valve

These operators have tried to combat corrosion by the use of inhibitors and to defeat the electrochemical action by the use of cheap anodic metals. While these methods have met with partial success in minimizing corrosion, none has been outstandingly successful. However at least one company, the National Oil Co. of Titusville, Pa., which has extensive properties in the Middle District fields, has found a means of successfully coping with the problem of scale deposition. This is a comparatively simple device which deflects the falling scale from the working barrel into a supplementary, outside barrel from which it can be removed at the will of the operator.

This company is gradually equipping all of its wells with this so-called "scavanger barrel." Previously it employed five pulling crews working full time. Now two crews, working half time, are ample. The following pulling records of a number of wells on National Oil Co. properties illustrate the seriousness of the problem of corrosion and its effects to this company:

No. 1-A Zane: Rods and tubing pulled every nine days. Equipped with supplementary barrel December 6, 1937. Pulled July 12, 1938, with barrel full of scale. Not pulled since.

No. 1-J Campbell: Rods and tubing pulled and working parts of working barrel replaced eight times per year. Supplementary barrel in service eight months, 25 days without pulling.

No. 1-K Campbell: Rods and tubing pulled, ball and seat and traveling valve replaced eight times per year. Supplementary barrel in service without pulling since November 29, 1937.

No. 21 Hunter: Rods pulled every two months. Supplementary barrel pulled eight months after installation because of hole in tubing. Barrel half filled with scale.

No. 11-A Stanton: Rods pulled every 10 days, tubing every two months. Supplementary barrel in service without pulling since November 29, 1937.

W. W. Irwin, Joseph Cubbon and Burt Sowles, of the National Oil Co., co-designers of the supplementary barrel, with its parts on rack. In the center is their first all-brass barrel

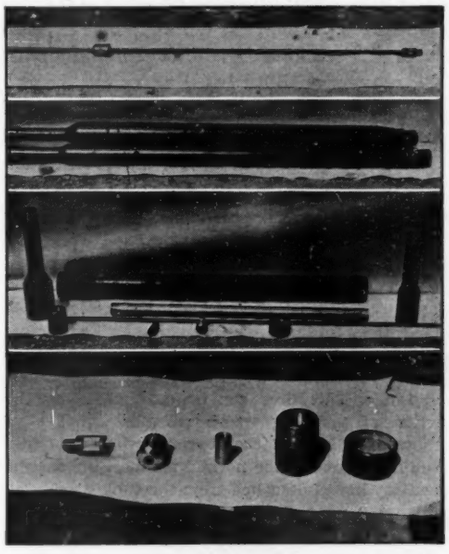
No. 8-A Campbell: Rods and tubing pulled every eight days. New ball and seat required at each pulling. Supplementary barrel in service without pulling since November 28, 1937.

No. 4-A Zane: Rods and tubing pulled every two months. Supplementary barrel in service without pulling since January 15, 1938.

No. 8-E L. Campbell: Rods and tubing pulled twice each month. Supplementary barrel in service without pulling since January 15, 1938.

This barrel was designed by Burt Sowles, foreman; Joseph Cubbon, mechanic, and W. W. Irwin, welder, of the National Oil Co., at the instance of the company. The standard working barrel, ball and seat or drop and seat and traveling valve equipped with standard cups are used to perform their customary functions. The only departure from standard practice so far as the above mentioned equipment is concerned is the drilling of four small-diameter holes in the top of the working barrel to permit ejection of fluid. Standard equipment alone was adopted so as to permit the use of equipment already in possession of the operator.

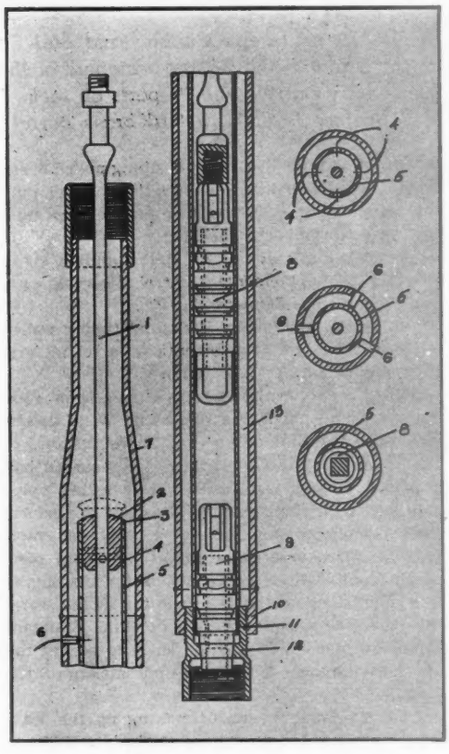
New equipment used in making up the scavenger barrel includes 5 feet of 4¼-inch or 3½-inch pipe, depending on the diameter of the hole; a



Top to bottom: Valve stem and plug or scale deflector. Completed barrels, 3 1/2-inch in front and 4 1/4-inch in rear. Two bell-nipples, body of barrel, working barrel, stem, collars and deflectors. Small parts including rod connection, deflector, stem traveling valve connection, adapter connection and tubing collar connecting working barrel inside supplementary barrel

bell nipple to connect the barrel to the tubing at the top; the scale deflector, a beveled top plug which fits into the top of the working barrel and rides on the valve stem, and a collar threaded both inside and out to connect the barrel and the tubing anchor. The barrel is connected to the tubing at the top and rests on the usual tubing anchor.

When the well begins pumping, the rise of the liquid in the working barrel lifts the plug or scale deflector from its seat, first opening the ports in



Parts and assembly of supplementary barrel: (1) Valve stem; (2) scale deflector. (3) scale deflector shoulder; (4) working barrel apertures; (5) working barrel; (6) aligning pins; (7) scavenger barrel; (8) traveling barrel; (9) standing valve; (10) tubing collar welded to scavenger barrel; (11) bottom connection; (12) standing valve seat; (13) reservoir space

the working barrel and then the top of the working barrel. When the power is shut down, the deflector drops back into the working barrel, closing it both at the top and at the ports. Pins welded into the side of the scavenger barrel align the working barrel. With the working barrel closed, scale depositions falling down the tubing strike the plug and drop into the outside barrel from which they can be removed at any time the operator deems advisable. This time can be determined by the action of pumping which resembles that of a plugged well when the scavenger barrel is full. Pulling is done in the normal manner, the supplementary barrel detached from the tubing, emptied of its contents and rerun.

The National Oil Co. has been making barrels varying from 3½ feet to 10 feet in length. However, it has been found that the capacity of the 5-foot barrel is sufficient to take care of the scale deposition in the most corrosive wells for a considerable length of time and the company is standardizing on this size. In the wells where corrosion is very severe, all brass equipment, excepting the outside barrel itself, of course, is used. Ordinarily the valve stem, the plug valve or scale deflector are of cast iron. Brass top and bottom subs are used always.

RECYCLING

(Continued from Page 57)

to 2.8 cents per barrel, on a 10-year basis from 6.5 cents to 3.2 cents, and finally on a five-year basis from 8.8 cents to 4.2 cents per barrel. (Example deleted).

"In another field the gas-oil ratio may be 10,000 feet per barrel. When high ratios of this kind exist then separator pressures can usually be maintained at higher levels and the compression ratio necessary for injection is thereby reduced accordingly. Continuing with calculations of the indicated cost of injection, consider the situation of an operator with 5,000,000 feet per day where a compression ratio of four is required. This operator, working individually, can compress the gas injection at a cost of 8.1 cents per barrel on the basis of a 15-year life, 8.7 cents for 10 years, or 10.5 cents for a five-year period of amortization of investment. A proper allowance for amortization of the cost of transportation facilities would be 3.2 cents on 15-year basis, 4.1 cents for 10-year, and 7.1 cents for five-year operation. Under these conditions the total cost of injection would be as follows: for 15-year life 11.3 cents; for 10 years 12.8 cents; and for five years 17.6 cents per barrel. (See Example 2 for detail). . . . .

"If the operator is able to combine his operations with others for injection so that the combined facilities handle 25,000,000 feet per day under the same conditions, then the cost of injection would be reduced on the 15-year life basis from 11.3 cents to 6.3 cents per barrel, for 10 years from 12.8 cents to 7.2 cents, and for a five-year period from 17.6 cents to 9.9 cents. (Example deleted).

"Calculations can be made to estimate accurately the cost as applied to the conditions in any field and for the operations of the individuals separately or collectively. There is nothing difficult or mysterious about this type of computation, and yet very little along this line has been done generally by engineers associated with the oil and gas industry. More of it should be done because of the revealing nature of the results, and it is one way that the engineers may justify their keep.

"The tables included herein have been prepared to facilitate the calculations necessary in order to arrive at the cost of compression under various operating conditions. They may be applied in the analysis of proposed recycling, repressuring or gas storage projects. The additional expense of the injection system including the injection well or wells must also be taken into consideration with reference to these projects. The number of injection wells required and the injection pressures necessary can be accurately determined by tests. . . . .

"It is apparent that the small operator with only a few wells should join, if possible, with others in the interest of economy, not necessarily for oil production operations, but, for pressure maintenance operations. If this is not done, however, the process in most cases still cannot be condemned because of excess costs. It is entirely feasible for an outside party in many cases to come into a field and offer compression and injection service at a reasonable charge."

"Practical Accounting for Oil Producers"

The need for a practical reference textbook on oil production accounting has been recognized by both producers and accountants. To meet this need, Robert M. Pitcher has prepared a book entitled "Practical Accounting for Oil Producers," which contains a nontechnical, comprehensive treatment of the accounting problems peculiar to the oil producing industry. Mr. Pitcher has spent 18 years actively engaged in various branches of the petroleum industry.

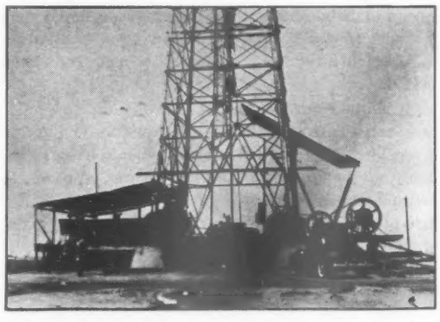
"Practical Accounting for Oil Producers" is written from the point of view of the oil man. It is practical and is written in plain, easy-to-understand English. Every principal feature of oil production accounting is covered. Only recognized accounting principles and sound practice are presented throughout this book. Illustrations of practical forms are given wherever they will assist in a clear discussion of various accounting records. No pet theories are advocated. Accountants and oil men who have read the book recommend it as a valuable reference textbook that can be used profitably by accountants and executives as well as by individual operators who are constantly confronted with problems beyond a simple record of income and expense.

"Practical Accounting for Oil Producers" may be purchased through the Mid-West Printing Co., Tulsa, and through the Book Department of The Oil and Gas Journal. Its price is $5, express prepaid (postage extra outside the United States), and a copy will be forwarded promptly upon receipt of your check or money order by the Journal's Book Department. Where payment or company purchase order is not included, the book will be sent c.o.d. to avoid delay.

DOLOMITE WELLS

(Continued from Page 49)

were on one lease and were recent completions. These wells had a June allowable of 12,641 bbls. and produced 13,671 bbls.; their allowable for July was increased to 17,570 bbls. but they failed to make it by 133 bbls. and during August they declined further to 11,546 bbls. The other well made its allowable during June, had its allowable



Rotary and cable tools rigged up on producing well in the North Oklahoma City dolomite field in an attempt to put it on a more profitable basis

increased for July and made it, but in August made only 66 per cent of the oil allowed it. Another well with an allowable for June of 8,250 bbls. lacked 7,981 bbls. of reaching that figure.

Wells which had the best chance of making their production allowable were for the most part recent completions although one well which was completed early in 1937 had only 21 per cent decline over a three-month period. This well on completion had a monthly potential of 12,720 bbls. and made 1,619 bbls. during the month of August. Pipe was set deep in the pay.

Average decline for the 10 wells over the four months was 58 per cent per well with decline of 98 per cent being the highest and 8 per cent being the lowest. The latter was for two wells which were grouped as a unit and both were recent completions, one going on production in March of 1938 and the other in the middle of June, 1938. Decline for the 10 wells over the four months was 60 per cent.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Analysis of Crude Oil From the Illinois McClosky Limestone

Could you furnish an analysis showing the quality of the oil produced from the McClosky limestone in the Illinois fields?—O. C.

The oil from the McClosky limestone is very much like the Centralia oil, analysis of which was reported on this page in the issue of September 8, 1938. The limestone from which the oil is now being produced is at an average depth of approximately 3,000 feet. The formation was first found by the Ohio Oil Co. at about 1,800 feet in Section 25, Dennison Township, Lawrence County, Illinois, in 1908.

The analysis following represents fresh oil, the distillation being made without steam.

OIL FROM McCLOSKY LIMESTONE, ILLINOIS

Gravity, A.P.I.	39.6
Sulfur, per cent	0.16
Pour, °F.	—10
Viscosity, S.U. at 100° F.	39
Color	Dark green

Distillation— Per cent over	At °F.
I.B.P.	95
5	200
20	290
40	435
60	605
75	690

Products—		Gravity	Yield, %
Gasoline		59.0	35.0
Sulfur, per cent	0.04		
Octane No.	52		
I.B.P., °F.	120		
Endpoint	448		
Kerosene		42.4	15.0
I.B.P.	330		
Endpoint	608		
Flash	150		
Sulfur, per cent	0.08		
Gas oil		34.1	25.0
I.B.P.	360		
Endpoint	520		
Pour	44		
Flash	195		
Residue		19.9	24.0
Flash	400		
Sulfur	0.38		
Viscosity at 210° F.	66		

When this gasoline is reduced to 400 endpoint, it will require about 2 cc. of tetraethyl lead to raise it to the 70-octane number grade. The total stock available for cracking is about 49 per cent, the combined gas oil and residue, which should yield approximately 26 per cent of cracked gasoline, having an octane value of 68, making the total yield of gasoline from the crude oil about 59 per cent, when processing as indicated.

Additional analyses of the McClosky oil were reported in The Oil and Gas Journal, October 28, 1937, p. 120.

Possible Causes For Corrosion of Pipe

We have a short connecting line, about 5 miles long, which is corroding at a rapid rate although the pipe was coated with asphalt. Some salt water flows down along a part of this line. Could this be the cause of the corrosion?—M. H. J.

If the pipe is fully covered with asphalt, the salt could not get to the metal. The soil along the pipe should be examined for salt, acids, and alkalis to determine if any corroding substances are present. There are several possible sources of corrosion, but not enough details have been given to suggest anything other than salt. A summary of the causes of corrosion of pipe has been given by the National Bureau of Standards as follows:

Differences in the electrical potentials of two areas on the same pipe or on two connected pipes may arise from many causes. These result in electric currents which remove metal from one of the areas. Differences of potential are so prevalent that they can be found almost anywhere if a sufficiently sensitive instrument is used. The problem of the corrosion engineer is to determine the significance of these differences of potential.

Corrosion may be the result of stray current electrolysis, segregations in metals, or corrosive soil conditions. Electrolysis is usually confined to the neighborhood of street-car tracks and substations, and can be identified by the fluctuating nature of the currents flowing on the corroding structure. Corrosion caused by inferior materials is comparatively rare.

If the above possible causes are eliminated, it is safe to assume that observed corrosion is due to soil conditions without testing the soil.

Electrolysis may be reduced by the use of corrosion-resistant metals. These must be selected with respect to the soil conditions which they encounter.

Reinforced bituminous coatings properly applied will also reduce corrosion. It is difficult, however, to apply and maintain a perfect coating.

Corrosion at the imperfections in coatings may be prevented by connecting the corroding metal to the negative side of a source of low potential direct current, and connecting the positive side to a set of suitably placed electrodes. This is known as cathodic protection.

An excellent reference book on the subject is "Corrosion, Causes and Prevention," by Speller.

Reference: Technical News Bulletin, National Bureau of Standards, No. 255, July 1938, p. 60.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Disodium Phosphate

Use—Corrosion inhibitor and water softener.

Form—Colorless crystals or granules. Efflorescent.

Formula—$Na_2HPO_4.12H_2O$.

Molecular weight—358.2.

Specific gravity—1.5235.

Melting point—95° F.

Solubility—Cold water 21.9 parts in 100 and any quantity in hot water.

LIMITATIONS

Purity, min., per cent	99
Insoluble, max., per cent	0.005
Iron, max., per cent	0.001

Note. Loses 35 per cent on exposure to air.

Keep in a cool place in tight containers.

Synthetic Methods for Producing Aldehyde From Natural Gas

I would appreciate any information you might give me, or references, on the production of formaldehyde from natural gas?—R.M.P.

Natural gas, essentially methane, has been converted to hydrogen and carbon monoxide which may be combined to form aldehyde or methanol. Methanol vapors passed over hot copper gauze has been converted to aldehyde, yielding 55 per cent and 58 per cent with silver. Using a catalyst of silver precipitated on asbestos, 64 to 66 per cent was obtained. A mixture of silver and copper gave 84 per cent. These yields are based on the methanol. Much of the early work on the synthesis of aldehyde was done in Germany and France where numerous patents on the subject have been issued. The preparation from methanol has been thoroughly studied by Hofman, Talleus, Loew, Trillat, and Orloff.

Ethane is easier to convert to formaldehyde than methane, the reaction taking place with shorter contact and at lower temperature. Marks (British Patent 238,935 for 1925) passes a mixture of ethane and air, ratio 1:2 by volume, at the rate of 27 liters per hour, through a quartz tube at 1,292° to 1,310° F. to obtain 8.5 pounds formaldehyde and 1.4 pounds acetaldehyde per 1,000 cubic feet of ethane.

Curme, Carbide and Carbon Chemical Co., (U. S. Patent 1,729,711) heats ethane for a very short time, a second or less at about the same temperature as Marks, to obtain a yield of 8.5 pounds formaldehyde and 1.4 pounds of acetaldehyde per 1,000 cubic feet.

Many references are mentioned in Marks-Hahn. Catalytic Oxidation of Organic Compounds in the Vapor Phase. See Chemical Abstracts.

Butyl Ketone Neither Hazardous Nor Toxic For Dewaxing Process

Has butyl ketone, used for dewaxing, any qualities which make it dangerous either because of explosive or poisonous tendencies?—T. E. L.

The use of methyl n-butyl ketone as a dewaxing agent was discussed by Pokorny and Stratford in The Oil and Gas Journal, March 31, 1938. Their statement relating to inflammability and toxicity is quoted.

"The explosion limits of methyl n-butyl ketone are 1.2 to 8 per cent by volume in the air. The closed cup flash is 60° F. Excepting the chlorinated solvents, this flashpoint is considerably higher than the usual dewaxing solvents, making the solvent a comparatively safe one to use in a plant.

"A concentration of 0.1 per cent was found by the U. S. Bureau of Mines experimental station at Pittsburgh to be irritating to the eyes and nose of man but was found to be harmless to guinea pigs after several hours' exposure. This concentration is below the explosive limit. The presence of solvent vapor is therefore readily detectable before reaching concentrations dangerous to the health or safety of man."

Reference: O. S. Pokorny and R. K. Stratford, "Methyl N-Butyl Ketone as a Dewaxing Solvent," The Oil and Gas Journal, March 31, 1938, p. 96.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Determining Porosity of Oil Sands

I am interested in securing some general information about methods used in determining porosity of oil sands. Is there a direct relationship between the porosity and the permeability of an oil sand?—G. N. D.

A geological formation must be porous in order that it may act as a container of fluid. To be a conveyor of fluid it must be permeable. The two properties are quite distinct, although permeability of a medium exists by virtue of its porous nature. Porosity is usually expressed in the percentage ratio between the space occupied by voids and that occupied by the solid matter and voids taken together. Permeability is defined as the rate of flow of a specified fluid through a unit cross section of the porous medium under a unit pressure gradient and conditions of viscous flow.

There is no fixed mathematical relation between the two properties. It is not difficult to imagine two sandstones with cemented grains having the same porosity, one of which possesses restricted communication between adjoining pores on account of the manner of cementation, while the other has comparatively large openings which give freer communication. The manner of cementation is an important factor in the movement of fluid toward the well, because of its direct bearing upon the permeability of the medium.

Presumably all sedimentary formations are porous when they are submitted to pressures of sufficient intensity. We shall find it convenient to classify them arbitrarily, however, as porous and nonporous, or as permeable and impermeable, according to the range of pressures and the nature of the fluids usually encountered at wells.

By the texture of a porous formation it is meant not only the size of the pores but their shape as well. The homogeneous texture called for in the description of the ideal reservoir was intended to include both of these features in a state of perfect uniformity throughout the medium. In the actual reservoir, however, it is recognized that homogeneity of texture in the vertical direction may seldom exist, because of the conditions under which the deposition of the material takes place. Although the texture may thus vary in different strata of the same geological formation, there is evidence to show that homogeneity in horizontal directions is most frequently closely approached, at least for reasonable distances from the wells.

"A Method of Determining Porosity" is the title of a paper prepared by D. B. Taliaferro, Jr., T. S. Johnson and E. J. Dewees of the U. S. Bureau of Mines and published as Report of Investigation 3352. This paper gives one method of determining the effective porosity of oil sands described within the general classification of gas-expansion methods.

In 1922 Washburn and Bunting described a gas-expansion method for determining the porosity of ceramic bodies, in which the test specimen is placed in a closed glass vessel that is connected to a second vessel by a glass tube containing a stopcock. With the stopcock closed, the first vessel is evacuated while the second is open to the atmosphere. After the atmospheric pressure and the reduced pressure in the first vessel are measured, the second vessel is closed from the atmosphere. The stopcock between the containers then is opened and the resulting pressure in the two vessels measured. Having previously determined the volume of the two vessels it is possible to calculate the volume of the sand grains or the material in the test specimen by the application of Boyle's Law.

In 1924 B. E. Lindsly, formerly with the Bureau of Mines, made some preliminary experiments with a gas-expansion method to determine not only the volume of sand grains in the specimen but also the bulk or total volume of the specimen. The determination of the bulk volume by this method required sealing the pores in the specimen with paraffin. As a part of the study being made by the Bureau of Mines of oil-sand specimens used in permeability determinations without contaminating the specimens. The method and apparatus suggested by Lindsly was developed in detail to determine the volume of sand grains in a given specimen. However, the bulk volume of the specimen is determined, as in a number of other methods, by displacement of mercury from a pycnometer.

The method developed and described by the Bureau of Mines in R. I. 3352 consists of determining the volume of the pores in a specimen by subtracting the volume of the sand grains from the bulk volume of the specimen. The volume of the sand grains is determined by noting the reduction of void space in a vessel or bomb of known volume when the specimen is placed in it. The volume of space in the bomb not occupied by the sand grains of a specimen is determined by introducing compressed gas in the bomb, observing the pressure in the bomb, and later releasing the compressed gas and measuring accurately its volume at atmospheric pressure. With the above data, the volume of the void space in the bomb is calculated by use of the pressure-volume relationship expressed by Boyle's Law, with a correction factor for the deviation from Boyle's Law, at the pressure and temperature of the test. When there is a difference in temperature between the compressed gas in the bomb and its expanded volume at the temperature of the gas in the bomb by application of the temperature-volume relationship expressed by Charles' Law. The volume of the empty bomb is determined in the same manner. The difference between the volume of the empty bomb and the volume of void space in the bomb with the test specimen in it gives the volume of the sand grains.

The total or bulk volume of the specimen is determined with a pycnometer using mercury. The difference between the bulk volume and the volume of the grains gives the volume of voids in the specimen, and this volume divided by the bulk volume multiplied by 100 gives the porosity in per cent.

The apparatus consists of a pressure bomb in which the test specimen is placed, equipment for measuring pressure, and a burette into which the gas is expanded and measured at atmospheric pressure. The assembly includes both a spring gauge and a deadweight gauge for measuring pressure. The use of the deadweight gauge is desirable, but a spring gauge may be used if it is calibrated carefully. The pressure bomb consists of a steel cylinder, 1¾ inches outside diameter and 3¼ inches long; the corresponding inside dimensions are 1 inch by 1⅞ inches. The cap or cover of the bomb fits with a ground joint and is held tightly in place with a clamp. It is desirable to have the volume of free space in the bomb as nearly equal as possible to the bulk volume of the test specimen. This is accomplished by inserting in the bomb a number of steel discs having approximately the same diameter as the inside of the bomb. If the specimen is less than 1 inch in diameter, steel collars, slugs, or any other solid material may be used to reduce the void space in addition to the discs. The collars, discs and slugs should be numbered and a record made of those used in each determination, so that whenever the same combinations are used on subsequent tests the previous determinations of volume of the bomb may be used. By following this procedure, it becomes possible to fit any specimen in the bomb with a combination that has been used previously. The burette is of a good grade, graduated in tenths of milliliters and has a capacity of 100 milliliters. Both the bomb and burette are operated in water baths in order to prevent any rapid change of their temperature and to facilitate measurement of the temperature.

The advantages of this method is that the test specimen is not affected in any way by the determination and is available for other tests; or, if it is desired, check porosity determinations may be made. Very accurate results may be obtained, although the time required for a determination is not excessive. If the volume of the bomb is known from previous tests, the determination of the volume of the sand grains can be made in from 5 to 10 minutes. The determination of the bulk volume of the core by the displacement of mercury will require about the same length of time. When a number of cores are tested, 15 minutes should be sufficient for each.

A standard procedure for determining permeability of porous media has been formulated by the Topical Committee on Development and Production Research of the Central Committee on Drilling and Production Practice in the Division of Production of the American Petroleum Institute. This is described in detail in A.P.I. code No. 27.

The standard unit of permeability of porous media to fluids shall be the "darcy" which is defined herein as "the rate of flow of milliliters per second, of a fluid of one centipoise viscosity through a cross section of one square centimeter of a porous medium, under a pressure gradient of one atmosphere (76 cm. Hg.) per centimeter and conditions of viscous flow."

This code outlines laboratory procedure, contains several tables to aid in making calculations and also conversion factors.

Standard methods of making porosity and permeability tests are used in many laboratories in the oil industry and conducted by engineers for the oil companies and by commercial companies. These tests are playing an important part in many operations in the production department such as estimating reserves, determining procedures to be followed in secondary recovery of oil in old fields and outlining production practices in new areas so that the ultimate recovery of gas and oil may be secured. As the technicians of the industry have developed these practical methods for forecasting results in the operation of oil fields it is desirable that the operators avail themselves of them and eliminate chance as much as possible.

The Fleet's Out!

HOUSTON OIL FIELD MATERIAL CO. INC. HOUSTON TEXAS

120 HOMCO CUTTING AND FISHING TOOL Service Cars are rolling down oil field roads of the Southwest . . . . First Aid against bottom-hole jinx.

With more than a quarter of a million dollars in tool power backed by the finest experience the field offers in man power, HOMCO CUTTING AND FISHING TOOL SERVICE is the largest and most complete service of its kind in the world. There is no cutting or fishing job so complicated that this organization cannot solve it at a profit to the well owner. Regardless of how hopeless your job may seem call the nearest HOMCO Store . . . . and one of our fleet is rolling your way.

WATCH OUR ROLL BY

A Complete Stock of Oil Well Supplies

•

A Proven Line of Picked Specialties

HOMCO

General Reduction in Mid-Continent Refinery Crude Runs in October

By W. T. ZIEGENHAIN

Refiners operating plants through the Mid-Continent area have scheduled lower crude runs throughout the month of October. Many factors favor this course and the same factors are operating to cause refiners to curtail runs in all areas. Probably the strongest factor is the posting of lower crude prices in some areas, reflecting a generally weak crude market. But even after lower crude prices are posted, there apparently is no incentive to increase refinery runs as the prices for the refinery products soon reach a correspondingly lower level.

Reduce Runs 24,000 Bbls.

In the Mid-Continent area refiners anticipate processing an average of 531,325 bbls. of crude daily throughout October according to estimates made early in the month. This compares with an estimated total of 555,695 bbls. in September or a reduction of a little more than 24,000 bbls.

The largest decline is shown for Oklahoma where 15,000 bbls. have been cut from the runs of one month ago. This accounts for the great bulk of the total reduction but it is significant that reductions are also shown for Kansas, Arkansas, East Texas, North Central Texas and the West Texas Panhandle.

The only areas in which additions to runs are reported include the North Louisiana group and the Southwest Texas group. In each instance the increase is small, the total for the two areas being shown as 1,000 bbls. daily.

Off 17 Per Cent

When the October runs of this year are compared with those of one year ago, the size of the reduction becomes more impressive. In the same month one year ago the estimated runs were 619,210 bbls. daily. This compared with the 531,325 bbls. estimated for the current month reveals a drop in the total runs for the area of more than 88,000 bbls. daily. This in turn represents a decrease in operations of about 17 per cent.

Among the factors which contribute to the reduction of Oklahoma's estimated refinery crude runs during October the more important include the lowering of the schedule at the Continental Oil Co. plant at Ponca City, from 25,000 bbls. in September to 19,500 bbls. in October; the shutting down of the Barnsdall plant at Barnsdall scheduled for the latter part of October and the shutting down of the Cities Service plant in Okmulgee in the latter half of October.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1936	1937	1938
January	501,600	531,535	529,710
February	519,960	541,790	507,985
March	478,760	533,875	491,935
April	506,775	558,385	532,120
May	513,510	572,855	527,315
June	527,225	593,625	540,005
July	539,370	605,640	557,520
August	557,650	624,475	554,810
September	553,215	625,485	555,695
October	536,330	619,210	531,325
November	548,015	592,170	.....
December	535,500	544,040	.....

Operations by Refinery Districts

Daily crude runs

	Oct.	Sept.	Dec.
Arkansas	26,025	27,800	1,975
East Texas	54,825	57,550	2,725
Kansas	127,150	129,225	2,075
N. Central Texas	34,450	37,860	3,410
North Louisiana	46,000	45,500	*500
Oklahoma	149,950	165,350	15,400
Southwest Texas	15,300	14,780	*500
W. Texas Panhandle	77,625	77,630	5
Total	531,325	555,695	24,370

*Increase.

Kansas

Refiners in the State of Kansas are witnessing the same pressure of relatively low gasoline prices, relatively high inventories of fuel and a declining seasonal demand for all oils as present elsewhere in the Mid-Continent and their operations have been generally curtailed. In this state the October runs are anticipated as 127,150 bbls. per day and this compares with 129,225 bbls. one month ago. However, the decrease of a little over 2,000 bbls. is practically all accounted for by the decrease in the runs of the Kanotex Refining Co. at Arkansas City. Here the runs will have been reduced from 7,000 bbls. per day to 5,500 bbls.

Arkansas and North Louisiana

Among the refiners in the North Louisiana and Arkansas areas the Lion Oil Refining Co. accounts for the greater share of the total decline. The extent of the decrease in the schedule is shown by the October estimate of 13,225 bbls. as compared with 15,000 bbls. last month.

North Central Texas

Except for the shutting down of the Waggoner Refining Co. plant at Vernon, which accounts for 3,000 bbls. of the reduction in crude runs for October, there are few changes in the operations of this area.

West Texas and Panhandle

Although the total crude runs of West Texas and the Panhandle remain practically the same for October as compared with September two important changes in schedules have occurred within the area. Included are the reduction in the runs at the Cosden plant at Big Spring from 10,000 bbls. in September to 8,500 bbls. and the increase in the operations of the Gulf Oil Corp. plant at Sweetwater from 4,880 bbls. in September to 6,800 bbls. this month.

Estimated Daily Average Mid-Continent Refinery Crude Runs for October

OKLAHOMA

Company and location—	Daily capacity	Av. dly. runs Oct.	Av. dly. runs Sept.
Anderson-Prichard Ref. Corp., Cyril	7,500	6,500	6,500
Barnsdall Ref. Corp., Barnsdall	5,000	2,000	4,250
Bell Oil & Gas Co., Grandfield	5,000	3,000	3,000
Black Gold Ref. Co., Oklahoma City	2,500	(*)	(*)
Champlin Ref. Co., Enid	16,000	15,000	15,000
Cities Service Oil Co., Okmulgee	4,000	1,050	2,500
Cities Service Oil Co., Ponca City	12,000	9,300	10,000
Continental Oil Co., Ponca City	28,000	19,500	25,000
Cosco Oil Co., Wynnewood	2,500	1,300	1,300
Cushing Ref. & Gasoline Co., Blackwell	1,700	(*)	(*)
Cushing Ref. & Gasoline Co., Cushing	4,200	4,000	4,000
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	(*)	2,000
Globe Oil & Ref. Co., Blackwell	8,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	3,500	4,400
Knox Ref. Co., Covington	300	100	100
Mid-Continent Pet. Corp., West Tulsa	35,000	20,000	21,000
Ohio Oil Co., Bristow	5,000	2,500	3,000
Omar Ref. Co., Garber	5,000	2,000	3,000
Phillips Pet. Co., Okmulgee	6,500	6,000	6,000
Peppers Gasoline Co., Oklahoma City	500	400	400
Pure Oil Co., Muskogee	9,000	6,000	6,000
Rock Island Ref. Co., Beckett	6,500	5,000	5,200
Sinclair Ref. Co., Sand Springs	6,000	4,000	4,200
Sun Oil Co., Yale	5,000	2,000	2,000
Sunray Oil Co., Allen	7,000	3,800	3,000
Texas Co., West Tulsa	16,000	10,000	10,000
Tide Water Oil Co., Drumright	12,000	11,000	12,000
Wilcox Oil & Gas Co., Bristow	6,000	3,000	2,500
Total	235,700	149,950	165,350

*Shut down.

EAST TEXAS

Company and location—	Daily capacity	Av. dly. runs Oct.	Av. dly. runs Sept.
Beacon Oil & Ref. Co., Henderson	4,500	(*)	(*)
Cascade Ref. Co., Reed Switch	2,000	2,000	2,000
Clay Ref. Co., Arp	3,500	2,100	2,100
Danciger Refs., Inc., Longview	6,000	4,000	4,700
East Texas Ref. Co., Longview	6,000	6,000	6,000
Hurricane Pet. Corp., Overton	5,000	2,875	4,000
Hurricane Pet. Corp., Arp	3,300	2,500	2,500
Lacy Ref. Co., Kilgore	3,000	1,800	1,800
Magnolia Pet. Co., Corsicana	5,000	4,650	4,650
McMurrey Pet. Co., Tyler	10,000	2,600	2,000
Paluxy Asphalt Co., Talco	5,000	3,000	3,000
Premier Oil Ref. of Texas, Greggtown	4,000	2,700	2,000
Sinclair Ref. Co., Camp Switch	4,000	2,700	3,400
Solvex Refs., Inc., Gladewater	4,500	(*)	(*)
Southport Pet. Co., Kilgore	4,000	2,600	3,000
Talco Asphalt & Ref. Co., Mt. Pleasant	7,500	4,000	5,000
Texas Co., The, Dallas	16,000	8,500	8,500
Texas Oil Products Co., Gladewater	3,000	1,500	1,300
Tower Ref. Co., Overton	3,500	(*)	(*)
Utah Ref. Co., Kilgore	2,000	1,300	1,600
Total	105,300	54,825	57,550

*Shut down.

NORTH CENTRAL TEXAS

Company and location—	Daily capacity	Av. dly. runs Oct.	Av. dly. runs Sept.
Baird Ref. Co., Baird	1,500	1,300	1,200
Bryson Pipe Line & Ref. Co., Bryson	2,000	1,500	1,500
Coleman Ref. Co., Coleman	700	400	400
Continental Oil Co., Wichita Falls	6,000	4,180	4,500
Denver Prod. & Ref. Co., Gainesville	3,000	1,000	1,000
Exchange Pet. Corp., Albany	800	(*)	(*)

(Continued on Page 102)

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—A Lansing lime producing area was opened in Section 13-9s-16w, 1½ miles southeast of the Laton pool in Rooks County. Wildcats were showing for pool openers in Section 9-33-6, Cowley County; Section 18-20-10w, Rice County, and Section 13-24-14w, Stafford County. Another northeastern Kansas wildcat was started 7 miles west of Topeka, in Shawnee County.

OKLAHOMA—A new gas area was opened in Beckham County in Section 25-8n-22w. A Love County wildcat in Section 35-6s-2w was dry and abandoned at 8,185 feet. A wildcat north of Britton in Oklahoma County gave promise of opening a Wilcox sand pool. A well estimated good for 10,000 bbls. of oil daily was completed in the Cement pool, Caddo County, making it the largest producer for that area.

NEW MEXICO—A new pool appears imminent 5 miles west of Eunice field in Lea County. The well made one head flow and then stood with 2,900 feet of oil in the hole.

TEXAS—The K.M.A. pool in North Texas was given a north and a south extension but the wells were not yet completed. In Wilbarger County, a deep producing horizon has been opened in the Castlebury pool in Section 78, Block 14, H.&T.C. Survey, by a 500-bbl. well. In Anderson County a 260-bbl. distillate well was brought in in the deep Glen Rose horizon in Cayuga, a Woodbine sand field. In West Texas the Tubbs pool in Crane County and Moss area in Ector County were extended. The north end of the Slaughter pool in Hockley County was extended a mile to the east. Possibility of a new Caddo lime pool in Shackelford was seen when saturated lime was penetrated 5 miles west of Moran. The recently opened LaRosa field in Refugio County took on importance when a north and a south outpost showed evidence of commercial production. A 7,000-foot test is to be drilled south of Robstown, Nueces County. Production in the Ezzell field in McMullen County was extended south and west by one of the best wells yet drilled in the field. On the Gulf Coast a new producing spot was opened 9,000 feet northwest of the South Cotton Lake field in Chambers County and Cedar Point in Chambers County was extended. The Eureka field in Harris County has a new producing sand below 8,000 feet.

LA-ARK-TEX—A second completion in the Shreveport field in Louisiana started at 65 bbls. per hour. It offsets the discovery well. Seven miles southeast of it another Shreveport outpost was dry at 6,155 feet, and abandoned.

KENTUCKY—The McClosky lime production in Henderson County has extended into the old Niagara pool where an old abandoned McClosky lime test was acidized into a good producer.

CALIFORNIA—The deep Ford zone in the Wilmington field is expected to be the next objective of operators. A recent completion in that zone started at 745 bbls. a day at 5,627 feet.

ILLINOIS—Seventy-one wells were completed in Illinois, including 58 oil wells and 13 dry holes, mostly wildcats and extension tests. The completions averaged 250 bbls. in initial production. One hundred new operations were first reported.

Completions in All Fields

(Week Ending October 8, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa., and W. Va.	29	7	3	39	2,850	3,552
Ohio	4	6	2	12	766	923
Indiana	0	0	0	0	71	87
Kentucky	10	6	11	27	698	492
Illinois	58	0	13	71	1,227	167
Michigan	20	1	12	33	682	606
Kansas	20	0	3	23	1,248	2,016
Oklahoma	15	1	12	28	1,342	2,124
Texas:						
North Central Texas	32	0	32	64	2,470	2,191
West Texas	33	0	4	37	1,533	2,102
Texas Panhandle	5	1	0	6	440	591
East Texas	27	0	1	28	1,485	1,838
East Central Texas	3	0	2	5	276	555
East Texas Border	0	0	0	0	109	272
Gulf Coast Texas	21	0	1	22	1,030	1,209
Southwest Texas	27	2	7	36	1,627	2,557
Total Texas	148	3	47	198	8,970	11,315
North Louisiana	6	2	4	12	503	514
Gulf Coast Louisiana	8	0	7	15	375	354
Total Louisiana	14	2	11	27	878	868
Arkansas	3	0	0	3	187	119
Montana	1	0	0	1	82	176
Wyoming	2	0	1	3	121	84
Colorado	0	0	1	1	10	17
New Mexico	8	1	2	11	436	575
Utah	0	0	0	0	2	2
California	21	1	2	24	1,013	1,186
Total United States	353	28	120	501	20,583	24,309
Total previous week	381	40	122	543		
Difference	28	12	2	42		

Outstanding Fields--Highlights

(Week Ending October 8, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	37	59	13	8,153	817	15,496
Wasson	11	36	5	2,451	144	8,637
Ector County	7	66	16	27,712	1,303	41,596
Winkler County	7	15	1	774	1,706	35,550
Howard-Glasscock	7	25	1	874	1,010	14,550
East Texas	19	35	27	1,314	25,688	369,300
OKLAHOMA						
St. Louis	9	30	4	1,560	700	99,300
Oklahoma City	4	9	0	0	1,092	36,525
KANSAS						
Barton County	3	20	5	1,895	371	10,575
Stafford County	3	17	2	391	180	4,550
Rice County	1	20	2	451	1,214	27,125
Russell County	3	28	2	146	1,138	21,475
NEW MEXICO						
Lea County	12	81	6	850	1,874	96,490
LA-ARK-TEX						
Rodessa, La-Ark-Tex	5	12	1	310	1,034	70,890
Cotton Valley, La. (deep)	2	20	1	215	91	11,115
Schuler, Ark.	1	27	2	915	100	29,910
Jennings, La.	2	14	1	150	119	22,416
MICHIGAN						
Overisel	2	12	3	755	46	3,450
ILLINOIS						
Central Illinois	41	303	57	14,598	1,232	73,970
CALIFORNIA						
Wilmington	5	20	6	4,960	567	95,750
KENTUCKY						
Birk City	3	19	9	1,526	73	4,550

Illinois and Kentucky

By STAFF CORRESPONDENT

Complete 58 New Oil Wells and 13 Dry Holes in Illinois

MATTOON, Ill., Oct. 10.—Seventy-one wells were completed in the Central Illinois fields in the past week of which 58 were producing oil wells with a combined initial production of 14,598 bbls. and 13 were dry holes scattered over the state. The two largest wells of the week included a 1,478-bbl. well from McClosky sand, and a 1,332-bbl. well from one of the upper Mississippian formations. One hundred first reports of new operations were accounted for, these ranging from locations to wells on which drilling had been started, indicating that Illinois was keeping up its record of starting more wells than were completed as the weeks pass.

Following is the record of completed work, with pay sands recorded, and initial 24-hour production given.

In Fayette County

Completions in Fayette County included: Carter Oil Co. No. 1 Hopper, NW NE SE Section 6-7n-3e, Weiler sand at 1,450-89 feet, Bethel at 1,551-82 feet, flowed 531 bbls. naturally. Jarvis Brothers No. 2 Yokey, SE NW SE Section 6-7n-3e, Weiler sand 1,448-86 feet, Bethel at 1,553-75 feet, flowed 375 bbls. Papoose Oil Co. No. 1 Owens, SE cor. SW SW SW Section 8-7n-3e, pumped 100 bbls. C. F. Steele No. 1 Arnold, NE NW SW Section 16-7n-3e, Weiler sand at 1,428-39 feet, stray sand at 1,443-51 feet, pumped 90 bbls. Cummings and others No. 1 Shather, NE NW NW Section 16-7n-3e, dry and abandoned 1,593 feet. Weiler sand was topped at 1,488 feet and stray sand at 1,539 feet. Burtschi No. 2 fee, SE SE SE Section 18-7n-3e, Weiler sand at 1,490-1,520 feet, pumped 100 bbls. Minerva Oil Co. No. 1 Richardson, NW NW NW Section 21-7n-3e, total depth 1,600 feet, pumped 18 bbls. of oil and 20 bbls. of water per day for three days. No sand records were obtainable. Glassco & Lewis No. 1 Cemetery, NW cor. NE SE Section 30-6n-3e, Weiler sand at 1,610-24 feet, pumped 144 bbls. in 12 hours.

L. C. Cole and others No. 1 Graider, NE SW SW Section 12-6n-3e, was dry and abandoned at 2,201 feet. McClosky lime was topped at 2,165 feet. Ray Brown No. 4 Rosa Hopper, SE SE SE Section 12-7n-2e, had Weiler sand at 1,526-50 feet, pumped 150 bbls. Kingwood Oil Co. and Duncan No. 7 Jay Yolton, SE SE NE Section 12-7n-2e, Stein sand at 1,519 feet, total depth 1,555 feet, pumped 190 bbls. Sherman and others No. 4 Burtschi, NW SE SE Section 18-7n-3e, Weiler sand at 1,500-39 feet, shot with 20 quarts, pumped 100 bbls. Sherman and others No. 5 Burtschi, NE SE SE Section 18-7n-3e, Bethel sand at 1,568-98 feet, pumped 200 bbls. Mabee Drilling Co. No. 1 Morrison, NE SW NE Section 19-7n-3e, shot with 108 quarts at 1,491-1,553 feet, pumped an estimated 175 bbls. Iotex Corp. No. 1 McKenzie, SW NW NE Section 29-7n-3e, Weiler sand at 1,537-67 feet, pumped 175 bbls.

Mabee Drilling Co. No. 3 Bank, SW NE SE Section 30-7n-3e, drilled to 1,922 feet and plugged back to 1,683 feet, pumped 131 bbls. from Benoist sand at 1,673 feet. This test had found McClosky lime at 1,810 feet but it was barren. Mulberry Oil Co. and Blackwell Oil & Gas Co. No. 1 Reed, NE cor. SE Section 31-7n-3e, Weiler sand at 1,552-73 feet, pumped 178 bbls. G. C. Rockwood No. 1 Soper, SW SW NE Section 9-8n-1e, was dry and abandoned at 1,730 feet, Benoist sand was topped at 1,662 feet. Carter Oil Co. No. 1 Richard Larimore, SW NW NW Section 14-8n-3e, shot with 40 quarts in Benoist sand at 1,491-1,502 feet, flowed 278 bbls. of oil with a very little water and mud. Carter Oil Co. No. 8 J. G. Main, SE SW SE Section 15-8n-3e, shot with 20 quarts at 1,546-52 feet, Bethel sand, flowed 453 bbls. of oil and 312,000 feet of gas.

Carter Oil Co. No. 6 Leander Wood, SE SW SW Section 15-8n-3e, shot with 50 quarts in Bethel sand at 1,466-87 feet, flowed 111 bbls. through tubing; No. 1 Beck, SE SW SW Section 16-8n-3e, shot with 40 quarts in Bethel sand at 1,567-79 feet, pumped 311 bbls.; No. 1 Meyers, NW SW SE section 29-8n-3e, shot with 40 quarts in Bethel sand at 1,525-43 feet, flowed 166 bbls., with 62,000 feet of gas. Jarvis Brothers No. 5 Sinclair, SE NE NW Section 29-8n-3e, shot with 40 quarts in Bethel sand at 1,520-30 feet, pumped and flowed 90 bbls. in six hours, estimated as a 350-bbl. well; No. 6 Sinclair, SW NE NW Section 29-8n-3e, shot with 20 quarts in Bethel sand at 1,585-1,600 feet, pumped and flowed 200 bbls. in 16 hours, estimated as a 300-bbl. well; No. 7 Sinclair, NE NE NW Section 29-8n-3e, shot with 40 quarts in Bethel sand at 1,575-86 feet, estimated at 300 bbls. per day. Magnolia Petroleum Co. No. 4 Buzzard, SW SW NE Section 29-8n-3e, shot with 40 quarts in Bethel sand at 1,455-71 feet, 180 bbls. Paul Doran No. 3 McCann, SE NE SW Section 31-8n-3e, dry and abandoned. It had been shot with 35 quarts at 1,528-43 feet and recovered only salt water. Johnson Drilling Co. No. 4 Goetting, NE NW NW Section 32-8n-3e, shot with 40 quarts in Bethel sand at 1,577-94 feet, pumped an estimated 150 bbls.

Carter Oil Co. No. 1 Hobbs, SW SE NE Section 6-7n-3e, shot with 60 quarts at 1,496-1,520 feet, 1,113 bbls.

Illinois Fields

HIGHLIGHTS OF THE WEEK: Seventy-one completions were more than offset by 100 new operations started, including locations, rigs and drilling. Oil wells averaged 250 bbls. initial production, largest being good for 1,478 bbls.

Daily production of new pools 73,970 bbls., and old pools 12,575 bbls., total 86,545 bbls.

Completed oil wells 58, operations including locations, rigs and drilling 450.

Clinton County

In Clinton County W. H. Nichols No. 1 Home B. & L., SW cor. SE NE NE Section 24-1n-1w, Centralia field, Benoist sand at 1,374-87 feet, shot with 10 quarts, then plugged back to 1,384 feet and shot with 5 quarts and then with 10 quarts, pumped 15 bbls. Pierson Oil & Gas Co. No. 1 Phelps, SW cor. SE NE NE Section 24-1n-1w, Benoist sand at 1,377-87 feet, shot with 5 quarts, pumped 5 bbls. of oil and 15 bbls. of water; Snowden & Ohmes No. 1 Holaire (formerly Muhlbach), NE NW NE Section 24-1n-1w, Benoist sand at 1,372-82 feet, shot with 10 quarts, pumped 150 bbls. Adams Oil & Gas Co. No. 3 Felton B, NW NE NW Section 1-1n-1w, Benoist sand at 1,346-67 feet, shot with 15 quarts, 68 bbls. of oil and 1 bbl. of water. Santa Fe Oil & Gas Co. No. 6 Robben, CWL SW SE Section 5-1n-3w, Bartelso pool, shot with 30 quarts at 961-76 feet, pumped 119 bbls. Shell Petroleum Corp. No. 8 Criley, NE SE SE Section 35-2n-1w, Centralia pool, shot with 21 quarts in Benoist sand at 1,347-57 feet, pumped 150 bbls.

In Clark County Black Gold Corp. No. 1 Briscoe, CWL NW SW SW Section 32-12n-14w, shot with 15 quarts at 420-60 feet, pumped 15 bbls.

In Wayne County H. H. Weinert No. 1-B Twist, NE NE NE Section 5-3s-7e, pay at 3,336-48 feet, flowed 210 bbls. in six hours and then 210 bbls. in eight hours, and was shut in for tank room.

In Jefferson County Carter Oil Co. No 2 Ray Free, NW SE SW Section 3-1s-2e, shot with 15 quarts in Bethel sand at 1,959-65 feet, pumped 190 bbls.

Marion County

In Marion County, Centralia field, Palmer No. 1 Adams, NE SW NW Section 3-1n-1e, Cypress sand at 1,600 feet, total depth 1,632 feet, dry and abandoned. Illinois Oil Development Co. No. 1 Frazier, NE cor. SE SE Section 17-1n-1e, total depth 1,875 feet, dry and abandoned. Cypress sand was topped at 1,686 feet. Lincoln No. 1 McClelland, NW cor. NE NE NW Section 18-1n-1e, Benoist sand at 1,375-95 feet, shot with 20 quarts, pumped 35 bbls. Menhall No. 6-T I.C.R.R., NE cor. SW SW Section 18-1n-1e, Benoist sand at 1,351 feet, total depth 1,365 feet, pumped 150 bbls. Texas Co. No. 1 W. Carr, NW NW NE Section 5-1n-2e, Lake Centralia field, Benoist sand at 1,706 feet, total depth 1,764 feet, flowed 343 bbls. in 24 hours through five-sixteenths inch choke. Texas Co. No. 1 City of Centralia land, SW NW NE Section 5-1n-2e, Benoist at 1,694 feet, total depth 1,741 feet, flowed 192 bbls. of oil through quarter-inch choke. Texas Co. No. 1 Bundy, SE NW NE Section 6-1n-2e, shut down at 1,844 feet with nothing showing. Benoist sand was topped at 1,792 feet and Aux Vases at 1,804 feet. Ohio Oil Co. No. 1 Murray, SE NW SE Section 7-1n-2e, Benoist at 1,784-1,820 feet, flowed 148 bbls. through 2-inch tubing in 24 hours and 130 bbls. the second day. H. H. Weinert No. 2 Foster, NE SE SE Section 7-1n-2e, Benoist at 1,794 feet, total depth 1,828 feet, flowed 160 bbls. Anderson and others No. 2 English, SW NW SW Section 8-1n-2e, Benoist sand at 1,791 feet, total depth 1,835 feet, flowed 198 bbls. through 2-inch tubing, Mammoth Producing & Refining Co. No. 3 Bachman, SW NE SW Section 9-1n-2e, Benoist at 1,871 feet, total depth 1,892 feet, pumped 165 bbls. Mammoth No. 4 Bachman, SE SE SW Section 9-1n-2e, Benoist sand at 1,892-1,907 feet, pumped 85 bbls. Texas Co. No. 2 Luttrell, NE NW NW Section 16-1n-2e, total depth 2,147 feet, a hole full of water, temporarily abandoned. J. Bauchen No. 1 Catlain, NW NE SE Section 10-1n-3e, dry and abandoned at 2,133 feet. Boyle and others No. 1 Forest, NE NW SE Section 10-2n-1e, was dry and abandoned at 1,716 feet. Magnolia Petroleum Co. No. 1 W. B. Young, SW SW NE Section 20-2n-2e, Bethel at 1,735 feet, total depth 1,791 feet, flowed 480 bbls. through tubing. Haynes & Thomas Drilling Corp. No. 2 N. L. Lee, SW cor. NE SW SW Section 28-2n-2e, Benoist sand at 1,719 feet, total depth 1,770 feet, estimated flow 350 bbls. through 2-inch open tubing. Vickers & Lilly No. 2 Brooks, NE NW SW Section 29-2n-2e, Cypress sand at 1,625 feet, total depth 1,773 feet, flowed 262 bbls. through 4-inch open tubing. Kingwood Oil Co. No. 2 Maxwell A, NW NE NE Section 31-2n-2e, Benoist sand at 1,649 feet, total depth 1,769 feet, flowed 1,332 bbls. through 2½-inch open tubing. T. D. Lane No. 2 Dempsey, NE cor. SW Section 31-2n-2e, Benoist at 1,712-42 feet, flowed 240 bbls. through 22/64-inch choke, Texas Co. No. 1 Wayman, SW SW NW Section 31-2n-2e, Benoist at 1,675 feet, total depth 1,716 feet, flowed 255 bbls. through five-sixteenths inch choke on 2-inch tubing. Wiser Oil Co. No. 1 Weems, NW cor. Section 33-2n-2e, Benoist at 1,724-74 feet, flowed 613 bbls. through 2-inch tubing.

Clay and Richland

In Clay County, Pure Oil Co. No. 3 Hubbis, C S half SE SE Section 8-2n-8e, total depth 3,090 feet, acidized with 5,000 gallons, pumped 110 bbls. of oil; No. 4 Nella V. Bunn, C E half SW NE Section 16-2n-8e, pay at 3,065-73 feet, flowed 1,478 bbls.; No. 1 Sharp A, C W half NE NE Section 16-2n-8e, pays at intervals from 2,991 to 3,080 feet, flowed 357 bbls.; No. 2 Margaret Bunn, C W half SW NE Section 17-2n-8e, pay at 2,997-3,002 feet, flowed 251 bbls.; No. 3 Margaret Bunn, C W half SE NE Section 17-2n-8e, pays at 3,005

to 3,065 feet, flowed 311 bbls.; No. 1 Hosselton and others, C E half NE SW Section 17-2n-8e, pays at 3,032-77 feet, acidized with 5,000 gallons, flowed 545 bbls. Ohio Oil Co. No. 1 Stanford, C E half SW SE Section 9-3n-7e, dry and abandoned at 3,460 feet, Ste. Genevieve lime was topped at 2,932 feet. Pure Oil Co. No. 5 B. Clay, CEL SW NE Section 27-1n-7e, 175 bbls. per day at a total depth of 3,133 feet.

Pure Oil Co. No. 1 G. L. Travis C, C W half NW SE Section 32-3n-8e, pay at 3,035-45 feet, total depth 3,057 feet, 988 bbls.; No. 4 C. D. Duff B, C W half SW SW Section 33-3n-8e, pay at 3,003-05 feet, total depth 3,018 feet, 372 bbls.

In Richland County, Pyramid Petroleum Co. No. 4 Sly, NW SE SE Section 22-2n-10e, was dry and abandoned at 3,100 feet. J. V. Wicklund No. 3 Sager, SW NE SE Section 22-4n-10e, was acidized with 1,500 and then with 5,000 gallons at 2,996½-3,002 feet and is an estimated 200-bbl. pumper. Sylvester and others No. 1 Miller, NW SW SW Section 26-4n-10e, total depth 3,137 feet, was acidized with 1,000 and then with 5,000 gallons and pumped 310 bbls. Sam Raitman No. 2 O'Donnell, SE NE NE Section 27-4n-10e. was acidized with 3,000 gallons at 3,071-74 feet and is an estimated 150-bbl. well, flowing.

Mammoth Producing & Refining Co. No. 1 Yount, CSL SE NE Section 29-3n-9e, pay at 3,017-25 feet, total depth 3,028 feet, 420 bbls.

Washington County

In Washington County Thompson Drilling Co. No. 1 Musial, SE SW NW Section 19-3s-1w, drilled to 1,383 feet and then plugged back to 1,287 feet and shot sand at 1,253-60 feet, with no results, and was shut down. Hull Stoffer and others No. 1 Williamson, SE SW SE Section 7-2s-3w, had McClosky lime at 1,452 feet and drilled to 1,475 feet and was reported dry and abandoned.

Wildcat Completions

Neil No. 1 Pfeffer, 900 feet from south and 330 feet from east line of NE quarter Section 20-2n-6w, St. Clair County, was a hole full of water at 1,000-23 feet and was abandoned.

Boyce and others No. 1 Foster, C NE NW SE Section 10-2n-1e, Marion County, was dry and abandoned at 1,710 feet. This test appears to have missed all sands.

W. I. Cole and others No. 1 J. L. Williams, NW NW SE Section 6-4n-4w, fourth principal meridian, dry and abandoned at 510 feet.

Spivey Drilling Co. No. 1 Storms, SE SW NE Section 15-6n-8w, Madison County, was dry and abandoned at 2,201 feet. It topped Bethel sand at 1,995 feet and McClosky lime at 2,165 feet.

O. J. Connell No. 1 Chris Leeding, SE SE NE Section 30-11n-5e, was dry and abandoned at 1,865 feet. Bethel sand was penetrated at 1,841-51 feet.

New Wildcats Started

In Clinton County Carlyle Development Co. No. 1 Bott, NE SW SW Section 17-2n-2w, was a machine rigged up.

In Marion County Max Pray No. 1 Sarah Rhodes, NE SE SW Section 23-3n-2e, was drilling at 1,300 feet.

In Madison County Penn Illinois Oil Co. No. 1 Heller, NW NW NW Section 18-4n-8w, spudded. Chlorins and others No. 1 Anderson, 350 feet from north and 200 feet from west lines of NE NW Section 12-4n-6w, spudded.

In Bond County Lindsey Brothers and others No. 1 D. E. Butler, NE NE SW Section 31-4n-2w, rigging up standard tools.

In Fayette County Burroughs No. 1 Hasler, 1,230 feet from south and 330 feet from west lines SW SE Section 8-5n-1e, Glen Dean at 1,210 feet, drilling at 1,300 feet.

In Shelby County Beck & Moore made a location for No. 1 Burrus, C SE NE NE Section 27-9n-2e.

In Coles County B. Wafford No. 1 Andrews, SE SE SE Section 21-11n-7e, was drilling at 185 feet.

In Brown County, Fell Oil Trust No. 1 Thomas, 600 feet from north and 400 feet from west lines of SW SW Section 15-1s-2w, fourth meridian, was drilling at 130 feet.

In Wayne County Robinson and others B No. 1 Acola, 220 feet from north and 1,520 feet from west lines of NW quarter Section 31-2s-6e, total depth 3,043 feet, was preparing to deepen. H. H. Eeinert No. 1 Beecher, NE NE NW Section 21-2s-7e, building derrick.

Wildcat Progress

In Lawrence County C. E. Forman No. 1 W. H. Thompson, 230 feet from south and 500 feet from west lines NW quarter Section 22-2n-12w, rigging up. Rockstead No. 1 Ulrich, SE SW NE Section 20-3n-13w, drilling at 250 feet.

In Richland County Pure Oil Co. No. 1 F. L. Wakefield, C W half NW NE Section 26-4n-9e, total depth 3,003 feet, plugged back to 2,583 feet and cemented with 55 sacks, drilling plug. Stewart No. 1 Ross Cable, NE NE NE Section 26-9n-9e, McClosky lime test, drilling at 1,690 feet.

In Fayette County Carter Oil Co. No. 1 Tennery, SW SE SW Section 31-9n-4e, total depth 1,652 feet, was plugged back to 1,567½ feet and put on the pump. It pumped 9 bbls. of oil and 62 bbls. of water in 24 hours. Weiler sand was topped at 1,558-91 feet.

Swords and others No. 1 Ohlman, SW NW NW Section 10-10n-1w, Montgomery County, drilling at 600 feet. Sam Graham and others No. 1 Fikan, C NE NE SE Section 27-11n-1w, was shut down at 450 feet.

In Shelby County Frank Frederick and others No. 1 Fluge, near C W half NE NW Section 34-10n-5e, machine on ground. Prunty Production Co. No. 1 Hickey, C SE SW SW Section 34-12n-4e, rigging up machine.

In Cumberland County Phillips Petroleum Co. No. 1 George Ozee, NE SE NE Section 27-11n-8e, Glen Dean 1,925 feet, drilling at 2,059 feet

In Coles County Thompson Drilling Co. No. 1 Degler, SE SE NE Section 9-12-7e, drilling at 1,670 feet. Mabee Consolidated Corp. No. 1 Oakland Bank, NW NW NE Section 31-14n-14w, shut down at 1,130 feet.

In Edgard County A. M. Myers No. 1 Brinkerhoff, C SE SE Section 26-13n-13w, drilling at 1,073 feet. Pearcey and others No. 1 Blair, NW NE NW Section 24-14n-14w, McClosky at 232-46 feet with a show of oil and gas, total depth 444 feet. E. Lapsley No. 1 Roll, SW SW NE Section 17-14n-13w, total depth 670 feet, shut down.

In Morgan County Alexander Oil Co. No. 1 Gray, 800 feet from west and 1,050 feet from south lines Section 25-15n-9w, total depth 834 feet, shut down for repairs.

In Champaign County Barber & Selver No. 1 Lindsey, C NW SE Section 20-20-8e, drilling at 365 feet.

In Piatt County Max Pray No. 1 Baker, SW NE NE Section 17-18-6e, drilling at 2,628 feet with water in the hole.

In Menard County Arthur Scroggins No. 1 fee, C SW SW Section 24-19n-5w, Schlumberger test, pay at 1,465-87 feet and 1,502-26 feet, cleaning out.

In St. Clair County Badger Oil Co. No. 1 Reichert, 150 feet from north and 2,640 feet from east lines of NE quarter Section 3-1s-10w, skidded rig 6 feet, drilling at 75 feet.

In Wayne County H. H. Weinert No. 1 Sprague, C N half NW SE Section 4-2s-7e, drilling at 1,300 feet.

Washington County: Morris and others No. 1 Henry Begulin, SW SW NW Section 12-1s-1e, Weiler sand 1,552 feet, drilling at 1,590 feet.

(Continued on Page 106)

Find McClosky Production in New Spot in Daviess County

OWENSBORO, Ky., Oct. 10. — Production in the Henderson County pools, most of it from the Birk City area, totaled 106,821 bbls. in August, or 24,167 bbls. more than in July, according to the records of Dr. James W. Martin, state commissioner of revenue. The Fordsville Gathering System took 63,607 bbls.; Aetna Oil Service, 36,871 bbls., and the Ohio Oil Co., 6,343 bbls. The Ohio Oil Co. took the production of the Niagara pool in Henderson County and the two other gathering systems got their oil from the Birk City and Gilmore pools. Production in Daviess County in August came to 56,396 bbls., comparing favorably with the 34,706-bbl. production of the county in July.

The Gulf Refining Co. test on the Otto Busby farm, 1 mile south of Hebbardsville in eastern Henderson County, was showing good indications of having discovered something worthwhile when it filled up and flowed oil and water over the top of the casing and into the pond.

Completions in the Birk City pool in Henderson and Daviess counties were two oil wells and two dry holes. On the Daviess County side of the field Bailey, Bond, Hays, and Fitzpatrick No. 2 R. M. Hagen, was a 200-bbl. well in McClosky lime pay, but A. H. Carpenter and others No. 1 V. H. Lytel was a dry hole at 1,900 feet. Across the river in Henderson County, Carter Oil Co. No. 1 Ollie Benham started at 250 bbls. a day, but the same company's No. 5 Dempewolf was dry at 1,888 feet.

Another McClosky lime pool appears to have been opened 1½ miles west of Utica in Daviess County. A. D. Shaffer, W. Albaugh, H. L. Behm, Harry Manion and others cleaned out a seven-year-old McClosky lime well that was supposedly dry, and acidized it. Put on the pump it produced at the rate of 240 bbls. per day. Offsets were at once located on three cornering farms.

New Operations

Completions and first reports in Western Kentucky in addition to the Birk City completions, were as follows:

In Butler County, Mount Zion School district: F. J. Breslin and others No. 2 Opal Harper was spudding. South Hill district: Porter Evans and others made a location for No. 1 Ben Moore.

In Daviess County, Utica district: A. D. Shaffer and others No. 1 Ed Bennett, an old well drilled deeper, had McClosky lime at 1,654-1,714 feet. It was acidized with 1,000 gallons and pumped 10 bbls. per hour; Ellis & Daugherty No. 4 Rex O'Flynn and Chenault & Farmer No. 3 Martin Weaver, were spudding. Birk City district: Locations were made for Major Oil Co. No. 1 Prudential Insurance Co., L. E. Morris tract, and W. E. Hupp and Snowden & McSweeney No. 6 Mrs. L. Taylor. Cane Run School district: Cane Run Petroleum Co. No. 7 R. E. Jackson is rigging up. Knottsville district: Joe Lang and others No. 1 John Reynolds drilling at 300 feet.

Hancock County, Easton district: Eureka Drilling Co. No. 2 Baker Brothers was dry and abandoned; Eureka Drilling Co. No. 1 Estill Keown, 50,000 feet of gas, total depth 480 feet; Joseph B. Mayer and others No. 15 Jesse Stewart spudding in. Patesville district: F. G. Anton and others No. 1 E. Boling, rig on location.

In Henderson County, Birk City district: Carter Oil Co. No. 1 Sarah Archer and others, is a location; Carter Oil Co. No. 2 Ollie Benham is a location; Aetna Oil Service Corp. No. 3 C. A. Dempewolf is a location; W. E. Hupp and others No. 1 Harry Haynes is drilling at 250 feet; W. E. Hupp and others No. 1 H. E. Jones is rigging up; Carter Oil Co. No. 2 L. M. Mauzy is a location. Spottsville district: Magnolia Petroleum Co. No. 1 Sam L. Green is pumping 1½ bbls. per hour, natural flow from Cunningham sand at 2,042-57 feet, will shoot. Mason Ferry district: A.C.R. Oil Co. No. 1 L. and N. Ruggles is spudding in.

In McLean County, Island district: South Penn Oil Co. No. 7 Alma Nall made 30 bbls. a day from Jett sand at a total depth of 1,450 feet.

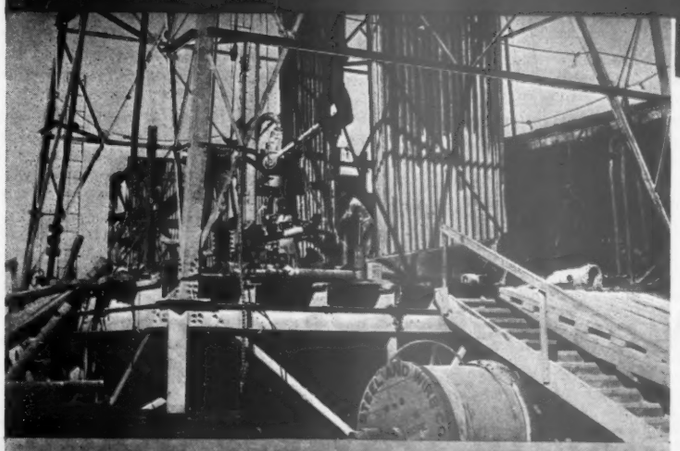
In Muhlenburg County, Ennis district: Porter Evans and others No. 1 Craig Heirs was a dry hole at a total depth of 1,007 feet. Beech Creek district: Wickland Development Co. No. 2 L. E. Jones is drilling at 800 feet. Paradise district: South Penn Oil Co. No. 3 Rogers-Crescent Coal Co. is a dry hole at a total depth of 3,987.

In Ohio County, Taffy district: E. J. Corliss No. 4 Bartlett Heirs is a dry hole at a total depth of 452 feet; No. 5 is rigging up. Adaburg district: Nollem Oil & Gas Co. No. 10 Vinsen Crow made 5 bbls. a day from Jett sand at 693-706 feet. Oklahoma district: A. Teller, trustee, No. 6 Archie Dickens is a dry hole at a total depth of 627 feet; No. 7 is rigging up; Walter Richards and others No. 1 Little Zion Church is a dry hole at a total depth of 582 feet; B. & B. Oil Co. No. 1 L. Patton is a dry hole at a total depth of 601 feet; Lewis & Lang No. 3 Gus Russelburg is spudding in; Henry Scholl No. 4 Oscar Westerfield is drilling at 300 feet. Fordsville district: New Deal Oil Co. No. 2 Carl Seaton is a dry hole at a total depth of 371 feet.

In Webster County, Steam Port Ferry district: Koker & Sellers No. 1 Albert Shelton is rigging up. Sebree district: I. B. Browning and others No. 1 Mary Sutton is rigging up.

ONE OF THE

Richest



DRILLING AT 10,000 FEET *with 4½-inch O.D.* NATIONAL *Seamless Drill Pipe. In the left foreground, note part of the 10,500-foot string of 5-inch O.D.* NATIONAL *Seamless Casing to be used here, and standing in the derrick, a string of 2½-inch* NATIONAL *Seamless Tubing.*

A STRING OF NATIONAL SEAMLESS DRILL PIPE, *ready to penetrate the toughest strata thousands of feet below the surface. Drillers of this well took the surest step they knew to prevent troublesome delays. They specified America's finest, strongest drill pipe —* NATIONAL *Seamless.*

A STAB, A SPIN, AND IN SHE GOES! *Two men guiding a section of* NATIONAL *Seamless Drill Pipe into threads that are correctly designed to resist damage during making up. Twist-offs and wash-outs are mighty rare with* NATIONAL *Seamless because of its uniform wall strength — Walls Without Welds!*

SETTING DOWN A RECORD STRING *of 16-inch O.D.* NATIONAL *Seamless Casing. This string was completely run 4,125 feet, ready for cementing 23½ hours after it was started. That's the kind of trouble-free performance you get with* NATIONAL *Seamless.*

Eastern Field Report

By STAFF CORRESPONDENT

Small Wells and Few Marked Past Week in Eastern Fields

PITTSBURGH, Pa., Oct. 10.—Eastern operators are anxiously waiting for additional depth in the test of the Convex Glass Co. on the Paul Dunham farm on Chestnut Ridge in Springhill Township, Fayette County, Pennsylvania. The present depth is 7,208 feet, where it was delayed for a new stem, and it was expected to resume drilling late in the past week. With a calcareous shale section at 6,207 feet followed by gray and brown shale which darkened to almost black until 6,628 feet where a lime section was encountered, closely resembling the top section on the Onondaga, it was believed that the latter formation had been reached. This lime section was different in characteristics from the Tully lime. When the lime section was passed through at 6,715 feet, followed by dark gray shale to the present depth, correlation with the nearest deep test over 9 miles northeast became difficult. The shales in which the test is now drilling has become black and shiny so that it is believed to be true Marcellus, and that the Onondaga lime may soon be reached. This test is running much lower than the deep tests northeast on the structure but, as it is a wildcat, gas possibilities still exist as neither of the two producers near the Summit Hotel were completed in the Oriskany sand, but in chert beds in the Onondaga.

In Beaver County, Pennsylvania, John T. Galey and others resumed drilling in the Onondaga in the test on the Eliza Allen heirs in South Beaver Township and reached 4,724 feet where casing was run in on a packer. The top of the Onondaga was at 4,566 feet and as that formation here is about 212 feet thick, the Oriskany should be reached this week. Drilling will be somewhat slower as a 5⅛-inch hole is to be carried.

SOUTHEAST OHIO

In Knox County, Ohio, S. Howard Rugg and others completed a gas well on the French and Lettie Veatch farm in Section 1, Jackson Township, in Berea sand at a depth of 942 feet. It gauged 32,000 feet a day.

In Licking County, William Stricker and others second test on the J. R. Davis farm in Section 8, Mary Ann Township, produced 13 bbls. the first day after a shot in Berea sand at 659 feet. In the same township, but in Section 4, Hoover Brothers drilled a dry hole on the Brice Moore farm through the Berea sand.

In Medina County, D. A. Eaken completed No. 19 Thomas Brown, Jr., Tract 6, Section 22, Chatham Township, in Berea grit at a depth of 424 feet. It produced 21 bbls. the first day after the shot.

In Washington County, Hall & Henning completed No. 6 J. S. McKee, at Wingetts Run in Section 32, Ludlow Township, in Squaw sand at 1,536 feet. It produced 5 bbls. the first day along with 70,000 feet of gas. It was not shot. In the northwest quarter of this township, and in Section 4, Frazeysburg Rex Oil & Gas Co., Inc., deepened the old Injun sand well on the Minnie and John Whitaker farm through Squaw sand at 1,450 feet where it produced 2 bbls. the first day after shot.

In Muskingum County, Wittmer Co. is drilling on the H. H. Bowden No. 2 lease in Washington Township, an offset to the producer on the No. 1 tract. It is now at 450 feet and will go to the Clinton sand.

SOUTHWEST PENNSYLVANIA

Sugar Run Oil & Gas Co. on the Ivan Williams farm in Nottingham Township, Washington County, Pennsylvania, was drilled down from 2,266 feet to 2,756 feet and tubed and made a gas well.

In Allegheny County, J. S. Wally has rig standing up on the Charles Spencer farm in Shaler Township, where he recently completed a fair gas well.

In Washington County, Equitable Gas Co. made a location on the Porter E. Herrod farm in Amwell Township. In South Franklin Township, A. V. Lewis and others are deepening No. 1 B. A. Bonham and have reached 3,075 feet.

In South Strabane Township, Washington County, J. G. and E. H. Tague have reached 1,400 feet in No. 8 R. G. Lutton. In Buffalo Township, R. M. Duden and others are drilling at 1,850 feet on the Antonius Provenzano farm.

In Nottingham Township, Washington County, Beedle & Clark were drilling at 1,425 feet on the Pittsburgh Coal lease. In Hanover Township, Braden & Herron have reached 1,400 feet in No. 3 W. N. Bell.

Greene County

In Washington Township, Greene County, Equitable Gas Co. made a location for No. 3 T. J. Huffman and was drilling at 3,280 feet on the John Huffman farm. This company is getting ready to deepen No. 1 H. W. Ewart in Center district from 2,255 feet, the Injun sand.

In Center Township, J. B. Orndoff is building rig for No. 3 J. E. Scott. Carnegie Natural Gas Co. is building a rig for No. 3 J. H. Orndoff. In Morris Township, R. E. Hoskinson and others are drilling at 2,620 feet on the H. W. Ealy-C. C. Conklin farm.

In Monongahela Township, Monongahela Oil & Gas Co. has the rig up on the George B. Vance heirs farm. In Richhill Township, W. L. Walters is drilling at 2,770 feet on the Ellsworth Burnfield farm. D. G. Braddock is down 2,450 feet, deepening No. 6 Newton Braddock.

Deep Tests

On Chestnut Ridge, Wasson & Co. recovered all the lost line in the test on the J. H. Sorg farm in North Union Township, Fayette County, and have taken hold of the tools lost at 6,223 feet but have been unable to jar them loose.

South on the Chestnut Ridge, New Penn Development Co., William E. Snee and others shut down the test on the Indian Creek Coal Co. William Johnson warrant at 1,150 feet to run casing. The rotary test of the Peoples Natural Gas Co. on the Piedmont Coal Co. lease was drilling below 1,814 feet. Both are in South Union Township.

WEST VIRGINIA

In West Virginia, the test of B. C. Deem, Jr., on his own property in Jefferson district, Pleasants County, total depth 1,935 feet, is good for 5 bbls. a day from Injun sand.

In Gilmer County, A. E. Ellis and others completed No. 7 Webster and Ware, in DeKalb district, at 1,834 feet. Big Injun was at 1,760-1,814 feet, and produced 61,000 feet of gas per day at 1,802-10 feet.

In Boone County, the Columbian Carbon Co. well on the R. H. Wood and others lease in Sherman district, which was deepened to 5,457 feet, was completed. Shale lay at 4,115-5,450 feet; Corniferous lime at 5,450-57 feet. The well started with 252,600 feet of gas from the shale.

In Pleasants County, First National Bank of St. Marys for the Maxwell Oil Co. completed a second test on the N. H. Williamson farm in Lafayette district in Big Injun sand at 1,802 feet, and it is a gas well gauging 200,000 feet a day. It had no oil showing.

In Ritchie County, Tri County Producing Co. completed a test on the E. M. Bell farm in Union district at 2,303 feet. The Big Injun sand was at 2,222-85 feet with 212,000 feet of gas at 2,240-50 feet. In Grant district, the Burge Drilling Co. drilled the test on the A. B. Weekley farm through the Injun sand to 1,790 feet and it was dry and abandoned.

Oriskany Gas Field

Two wells were completed in the Kanawha County, West Virginia, Oriskany gas field. In Poca district, United Fuel Gas Co. completed No. 4801 on the Floto Johnson farm at 5,051 feet, Oriskany sand, and it had a final gauge of 12,091,000 feet of gas per day. In the same district, this company completed the test No. 4799 on the O. V. Milan farm in the Oriskany at 5,076 feet and it gauged 8,694,000 feet of gas per day.

In Elk district, Kanawha County, Columbian Carbon Co. is drilling in Corniferous lime on the W. B. Fogarty farm at a depth of 4,908 feet. This company had reached 4,235 feet in No. 1 Bratton Hanna, and 2,039 feet in No. 2 Ida Hughart. United Carbon Co. had reached 1,760 feet in the Van Canterbury test.

In Poca district, Poca Fork Oil & Gas Co. topped Corniferous lime at 5,059 feet on the Levi Combs farm. Lima Gas Co. reached 4,640 feet in the A. T. Mairs test; Spartan Gas Co., 3,465 feet in the A. E. Fisher test; Hays Oil & Gas Co., 2,788 feet on the H. C. Painter land, and at 1,740 feet in the F. M. Ray test; Meigs Development Co., 1,400 feet in the E. P. Higginbotham test.

The Columbian Carbon Co. is down 4,687 feet on the W. H. Odell and others test, and at 2,700 feet on the W. H. Miller and others land; United Carbon Co. is drilling on the William Moss and others lease and was down 1,320 feet. Mullins Gas Co. had reached 4,550 feet on the Earl K. Johnson land and at 4,975 feet in the Manfred Fisher and others test.

The United Carbon Co. is drilling in the test on the F. T. Good and others farm in Poca district. This company had reached 460 feet in No. 4796 W. J. Glass; at 4,885 feet in the J. W. Harding and others test; at 4,042 feet in No. 4804 Odell and Glass; at 3,985 feet in No. 4805 Milam and Odell; at 2,713 feet in No. 4806 Joseph W. Legg; at 1,425 feet in No. 4808 J. H. Bumgardner; at 993 feet in No. 4811 S. E. Gibson. This company is building rig for No. 4795 Nancy Carney, and a rig is up for No. 4794 B. B. Milam, and No. 4816 Mary L. Miller and others.

Deep Tests

In Jackson County, the drilling tools are still in the hole in the test of Joe Rubin on the W. J. Brown farm in Ravenswood district after the gas blowout when the bridge was broken after the Oriskany was shot. There was a gauge of 200,000 feet a day which rocked up to over 1,600 pounds in 14 hours.

In Ripley district, Jackson County, Everett Starcher finished the fishing job on the Story Boggess farm and has reached 1,900 feet. In this district, it is reported that Potter Development Co. (New Penn Development Co.) will clean out and shoot the test on the William T. Chancey farm which was drilled through the Oriskany sand with a small showing of gas.

In Pleasants County, Columbian Carbon Co. has resumed drilling on the Gile Hammat farm in Grant district after an arduous fishing job, and had reached 4,209 feet.

New Work

In Cabell County, H. A. Waggoner is drilling on the Leonard Paugh farm in McComas district, elevation 615 feet. In Grant district, Shale Gas Co. is down 2,990 feet on the Adaline Chapman land, and R. H. Adkins, trustee, is at 1,450 feet on the James Beckett farm.

In Lincoln County, the Harvard Gas Co. will drill No. 6 Lincoln Mineral Co. in Washington district, elevation 920.25 feet. Kanawha Gas & Utilities Co. will deepen No. 164 Julia Cooper heirs, in Union district.

In Logan County, Boone County Coal Co. made a location for No. 13 M fee, in Logan district, elevation 1,891.87 feet. This company had reached 2,495 feet in No. 12 L, on the same farm.

In Barbour County, Hope Natural Gas Co. is drilling at 900 feet in No. 7840 Annette Riley, Elk district. In Upshur County, Hope Natural Gas Co. is down 3,910 feet in No. 7813 Hazen Phillips, Banks district. In

TRINITY *Inferno* CEMENT STAYS FLUID 3 TIMES LONGER

AT 200° *TEMPERATURE*

Chart shows compartive fluidity of Inferno 16.0 lb. slurry at 200 degrees

A proven Sulphate-resisting cement for deep well cementing

The chart above shows that *Inferno* is as fluid after *three* hours at 200-degree temperatures as a standard cement is at *one* hour! This extra time may mean the difference between success and failure in a deep-well cementing job. It may mean the difference between getting 200 sacks of cement behind the casing and the 1,000 necessary to do a job. It may save you many dollars.

***Inferno's* low viscosity makes it easy to pump in heavy slurries. It is easier to mix than Standard Portland Cement. It is a true Portland Cement containing no admixtures. It sets slowly yet hardens quickly—developing a high compressive strength in one day. Buy this low-cost protection against cementing failure for your next deep well cementing job.**

At your nearest dealer's.

REG. PAT. OFF.

Nicholas County, same company is fishing at 910 feet in No. 7822 C. & H. Corp.

In Ritchie County, W. R. Hays will deepen No. 3 Ruth Snodgrass in Murphy district, where Z. N. Connelly is drilling at 1,360 feet on the Ernest Wilson farm.

In Putnam County, Smith & Ellis started drilling on the J. H. Payne heirs farm in Scott district. Smith Oil & Gas Co. has part of the material on the ground on the A. B. Griffith farm.

In Doddridge County, James Prunty has reached 400 feet on the R. L. Boyce farm in Central district, and in West Union district Hope Natural Gas Co. reached 1,900 feet, and is shut down on the G. W. Farr farm.

In Clay County, Pittsburgh & West Virginia Gas Corp. is drilling at 1,135 feet in No. 7658, on the J. D. Engle farm, and on the Amanda Jarvis farm No. 7659 is down 1,575 feet.

In Wayne County, Huffman and York made a location on the Murty Darr farm in Butler district, on Whites Creek. In the same district, Chartiers Oil Co. will deepen the test on the H. S. Jackson farm on Twelve Pole Creek. In Union district, C. J. Huffman and others are drilling at 100 feet in the test on the Meredith Myer farm.

In Wetzel County, Wasmuth and Callahan Gas Co. is drilling a test on the Monroe heirs 2 acres, along the east side of State Route No. 2 on the edge of the town of Proctor. Daniel Henthorn and others will drill on the Robert Chance townlot in Proctor. G. L. McIntyre and others have started drilling on the Clarence Early 36 acres on the eastern edge of Proctor. The farm is between the Clark Parson farm and Route 2. On the Ohio River above Proctor one-half mile, Thomas Kinley and James Fonner are drilling a test on the Robert Chance 8 acres. On a townlot in Proctor, Thomas E. Newton and others are drilling on the Bruce Fitzsimmons.

Michigan Field Report

By
O. C. PRESSPRICH

Operators in Southwestern Pools Protest Price of Crude

SAGINAW, Mich., Oct. 10.—Aroused by recent price cuts on Allegan and Van Buren County crude oil, operators in the "Overisel 21" pool of Allegan County have signed an agreement 100 per cent strong not to sell oil for less than $1 a barrel, nor to "drill or cause to be drilled any wells which will force offset development in the area."

The pact is the most drastic action taken by operators since Buckeye producers banded together a year ago to fight price cuts through rigid proration. The agreement among Overisel operators, which may extend to other Allegan areas and to the Bloomingdale district of Van Buren County, providing a 100 per cent response can be obtained, is signed by some of the state's leading producers. The pact may be broken, according to reports, only by serving 10-day written notice on all signers.

18 Wells Shut Down

Eighteen producing wells in the area, all yielding in excess of 100 bbls. daily, were shut down Thursday, when the agreement became effective. Twenty other tests in various stages of completion likewise suspended operations to await more favorable conditions.

Allegan and Van Buren county operators claim an unjust difference in prices between their oil and Mid-Continent crude. Oil from the fields in Allegan and Van Buren was slashed twice last week, within 48 hours, reducing the price from $1.12 a barrel to $1. The 200-bbls.-a-well-per-day proration likewise was lowered to 100 bbls. late last week in an attempt to stabilize prices.

For several weeks southwestern Michigan fields dominated new production. Allegan County pools added 11 new producers in four townships, and Van Buren County's Bloomingdale pool added five. Clare County's Redding pool added one favorable producer and Ogemaw County another, these being the only new oil wells outside the Allegan and Van Buren areas last week.

For the first time since extensive development followed the Buckeye Township discovery in 1936, Gladwin County oil fields were absent from Michigan's list of new producers.

Allegan and Van Buren pools this week supplied 98 per cent of all new production. Van Buren County's new Bloomingdale field maintained a perfect average with five new oil wells and no dry holes for an estimated increase in daily potential of 2,800 bbls. The newly discovered Overisel pool led in Allegan County with four wells good for 1,700 bbls. daily. Overisel had one dry hole. Heath Township, immediately south of Overisel, supplied three new wells, estimated at 850 bbls. daily. Salem and Monterey townships, older developed sections of Allegan County, listed two producers each. Salem had one dry hole.

To indicate the complete domination of southwestern Michigan oil fields in last week's production chart, the estimated daily potential was placed at 6,500 bbls. in comparison with 800 bbls. added by the two central Michigan completions.

Van Buren County

Bloomingdale Township (1s-14w)—Top ranking new well in the field for the week was Lucas & Thornberry No. 1 Harpham, NE NE NW Section 16. It rated at better than 1,000 bbls. daily, natural flow, after a three-hour run. It was then shut down, due to lack of storage and the proration curb. Fisher & McCall No. 5 Wiggins, NE NW NE Section 16, the fifth well of a series drilled successfully by the discoverers of the Overisel field, proved another prolific producer. It rated slightly over 700 bbls. daily, estimated, after an acid treatment—one of the first tests in the vicinity to be brought into production after acid without first rating as a natural producer. A favorable natural showing was reported, but operators desired to acidize to increase porosity. Fisher & McCall No. 4-B Wiggins, SE SE SW Section 9, was acidized to 500 bbls. daily, and M. R. & T. Oils No. 1 Murray, SE SE NE Section 17, west extension, gauged an estimated 400 bbls. daily, natural flow. Rex Oil & Gas Co. No. 1 Holmes, NW NE NE Section 16, was a 200-bbl. daily natural producer.

Allegan County

Overisel Township (4n-14w)—Stewart Oil Co. No. 1 Freye, SW NW SW Section 22, gauged an estimated 750 bbls. daily after acid, and the same company's No. 4 Oldebekking, E half E half SE Section 21, was rated at 250 bbls. after acid. Gordon Oil Co. added one producer and completed the only dry hole in the area. Gordon's No. 1 Freye, SW NE SW Section 22, was estimated at 500 bbls. naturally, but No. 1 Hoffman, SE SE NE Section 21, was dry. Swanson Consolidated Oil Co. No. 2 Hoffman, SE NE SE Section 21, was a 200-bbl. well, after treatment.

Heath Township (3n-14w)—Development in Section 1 continued to fill in locations lying immediately south of Overisel's Section 36—discovery sector—with three oil wells. Lima Oil Co. No. 2 Gates, NE SE NE Section 1, topped the Heath wells with an estimated 400 bbls. daily in the natural state. Diamond Springs Syndicate No. 2 Rigterink, SE SE NW Section 1, was acidized to 250 bbls. daily, and Fortney Oil Co. No. 7 Wesseling, NE SW NE Section 1, gauged 200 bbls. daily, natural flow.

Monterey Township (3n-13w)—Border development immediately southeast of the Overisel discovery added a favorable natural producer to the Monterey pool at James E. Flanigan No. 1 Snoeink, SW NW NW Section 6, rated at 300 bbls. Hood Oil & Gas Co. No. 4 Wright, SE NW SW Section 9, in the older developed section of Monterey, rated 100 bbls. after acid.

Salem Township (4n-13w)—Central Salem recorded two producers and a dry hole last week, being the only development in Allegan of the week not directly connected with the Overisel play. Crown Development Co. No. 1 George, NE NW SW Section 21, gauged 700 bbls. naturally, one of the best Salem producers in weeks. Darke Brothers No. 1 Hardy, SW NE SW Section 21, completed as a 50-bbl. acidized producer. Muskegon Development Co. found a dry hole at its No. 1 Vander Kolk, NE NW NE Section 20.

Clare County

Redding Township (19n-6w)—Interest in the Clare-Freeman area grew considerably last week when, after weeks of testing and several acid treatments, an 11-bbl. daily potential was raised to 775 bbls. the first 24 hours. The test was Pure Oil Co. No. 1 Switzer, C S half NW SW Section 27. The Switzer test is more than a mile north of the Freeman discovery, and proves up considerable territory for possible favorable exploration. Originally the test was drilled to 3,903 feet, below an oil show and into water. It was plugged back to 3,900 feet, where operators tested for some time. Failing to rate more than an 11-bbl. potential, decision was made to test further. Deepened to 3,908 feet and acid-treated, the test responded with the rather sensational flow of 775 bbls. At present the test is pinched in to approximately 500 bbls. daily Socony-Vacuum company No. 2 Van Horn, in Section 3-18n-6w, was expected in production this week.

Ogemaw County

Klacking Township (23n-2e)—Pure Oil Co. wildcat venture at its No. 1-D State, NW NW NE Section 5, failed to rate, running into water.

Horton Township (23n-1e)—Weber Oil Co. No. 1 Gray, NW NW NE Section 2, was completed as a 50-bbl. acidized producer.

Midland County

Edenville Township (16n-1w)—Sun Oil Co. abandoned its No. 2-D State-Edenville, SE SE SE Section 28, when it drilled into water at 3,968 feet. It bottomed at 3,972 feet.

Montcalm County

Bloomer Township (9n-5w)—Rex Oil Co. abandoned its No. 1 Cheney, NW SW NE Section 11, failing to log a commercial show at the wildcat location.

Notwithstanding two cuts in crude prices in the space of two days, oil operators in the Allegan and Van Buren county areas continued their preparations for heavy exploratory play in the district. Twenty-two of the 32 drilling permits issued during the week by the State Conservation Department went to those counties, 16 to Allegan and 6 to Van Buren. Isabella County took three and the remaining seven were distributed one apiece through Bay, Clare, Crawford, Mecosta, Midland, Montcalm and Ogemaw counties.

A feature of the weekly list of drilling permits was the hint of Gulf Refining Co. extensive wildcatting campaign, revealing licenses taken for wildcat tests by Gulf in Monitor Township of Bay County, Freeman Township of Clare County, Hamilton Township of Van Buren County, Nottawa Township of Isabella County, and Colfax Township of Mecosta County.

North Louisiana, Arkansas

By
GEORGE WEBER

Good Producer and Dry Hole in Shreveport, La., Outposts

SHREVEPORT, La., Oct. 10.—A failure of a southeast outpost in the producing horizon of the Shreveport field highlighted a week of relatively unimportant development in the North Louisiana and Arkansas districts. The F. W. Martin Drilling Co. and Superior Oil Corp. No. 1 Querbes, for several weeks a "tight" well, was revealed during the past week to be dry in the Pettit lime, and operators are shut down, waiting possible orders to drill deeper.

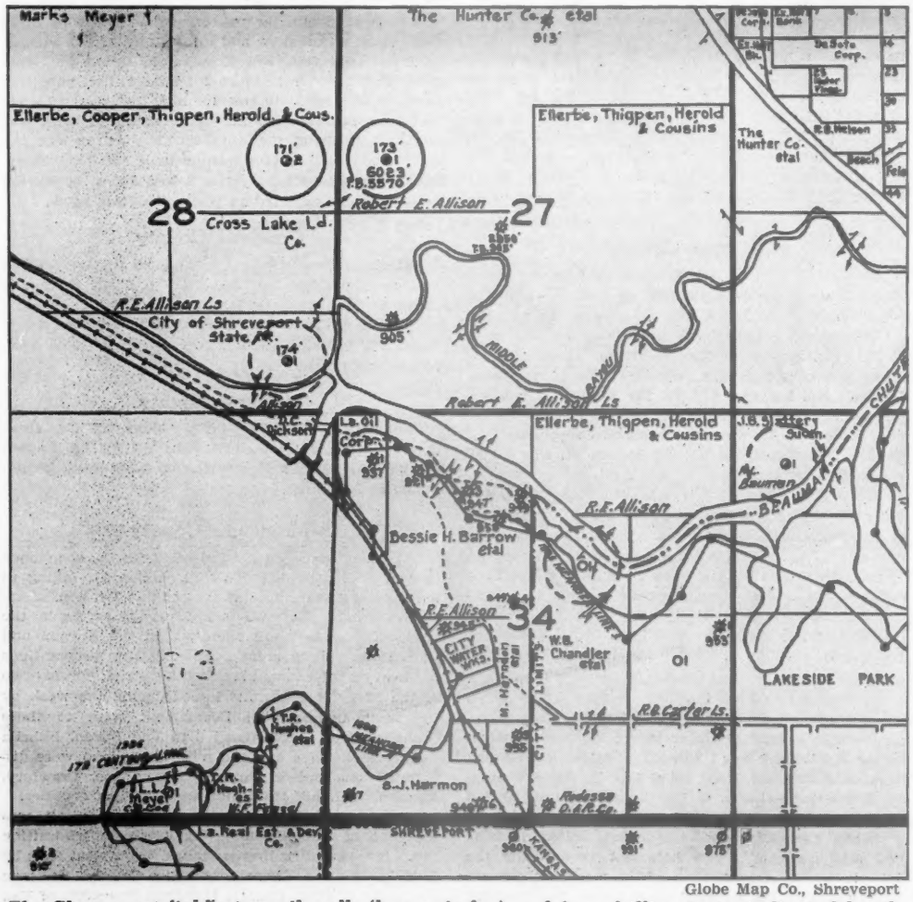
Scattered developments of interest in the tri-state area included the setting of casing in the deep Texas Co. No. 1 Adams, Panola County; the showing of Woodbine oil in a De Soto Parish wildcat; completion of the second well for the Shreveport field, and the testing of salt water in a northeast outpost test to the Lodi area of Cass County Rodessa.

The general reduction of crude prices announced for North Louisiana, Arkansas and East Border Texas, has not yet shown an effect in future drilling. The new price schedules initiated by the Standard Oil Co. of Louisiana were being followed by other purchasers in the area at the week's end. They were brought about by movements of crude from Lisbon, Schuler and the South Louisiana fields, at prices below those formerly quoted in the gravity schedules for the two states.

Shreveport Outpost

The information on the F. W. Martin and Superior Oil Corp. No. 1 Querbes in Section 20-17-13 was released this week, showing the test to be dry in the horizon which produces in the field discovery, 7 miles to the northwest. The Broadmoor test showed the following tops from the Schlumberger survey run on it several days ago: Top of anhydrite, 4,096 feet; top of massive anhydrite 4,370 feet; base of massive anhydrite, 4,628 feet and top of Travis Peak 5,898 feet. Elevation of the test is 175 feet. Total depth is 6,155 feet. Operators may deepen the test to the lower Marine horizon, unless it is abandoned at the present depth.

In the immediate vicinity of the discovery well for the Shreveport field, the second producer, in west offset position was completed for a good producer. The R. E. Allison No. 2 Ellerbe in Section 28-18-14 made an initial gauge of 65 bbls. per hour through a nine-sixteenths inch choke with tubing pressure of 475 pounds, casing pressure of 750 pounds. Seven-inch casing was set at 5,546 feet. The porous lime in the well was cored at 5,547-69 feet. Four other active tests are under way in the vicinity of the new well. R. E. Allison No. 1 State in SE Section 28-18-14 is drilling below 4,700 feet. R. L. Bauman No. 1 Slattery Estate, NW Section 35-18-14, is plugging back to sidetrack around drill stem stuck in the hole after the gas blowout of several weeks ago. C. D. Lee No. 1 Meyer, near the center of the south line of Section 33-18-14, is drilling below 1,600 feet and the Rodessa Oil & Refining Co. No. 1 Chandler, C SE NE Section 34-18-14, is below 950 feet. The relative locations of these tests may be seen on the accompanying map.



Globe Map Co., Shreveport

The Shreveport field's two oil wells (large circles) and four drilling tests, indicated by the dotted circles

Panola Wildcat

The deep wildcat in Panola County, Texas Co. No. 1 Claud Adams, bottomed at 11,303 feet has pipe set this week-end at about 9,100 feet, after drill pipe, stuck on bottom, was cleaned out with the exception of 300 feet yet on bottom. Various sands in the lower Marine horizon will be tested through perforations. Information on this test has not been made public, but it is believed that the company has possibilities of bringing in gas distillate production.

In De Soto Parish, the S. S. Alexander No. 1-A Stoll, a wildcat located in Section 5-12-16, near the Texas line, cored the Woodbine sand at 2,725 feet and reported a good showing of oil and gas. Casing may be set in the well to attempt an oil completion in that horizon.

Cass County Outpost

A northeast outpost to the Lodi section of Marion County, Rodessa, Bateman Drilling Co. No. 1 Eliza Jaynes, in Cass County, is shut down at total depth of 6,505 feet awaiting orders. Salt water was encountered in the horizon corresponding to that producing in the Lodi area.

Webster Wildcat

An important deep test for Webster Parish was staked this week. Sibley Sabine No. 1 McDonald, C NW NW Section 32-17-9w, will explore the deep production possibilities in the Dubberly area, a shallow gas field in the southern section of the parish.

Arkansas Wells

In the Buckner field of Columbia County, Arkansas, Standard Oil Co. of Louisiana reacidized No. 2 Warren which last week made oil and a heavy asphaltic emulsion. After swabbing, the well flowed into pits, making from 4 to 40 per cent basic sediment. The well will be completed on pump.

Standard Oil Co. of Louisiana also made tests on No. 1 Crumpler, in the Village field, Columbia County. On a three-sixteenths inch choke it flowed at the rate of 302 bbls. per day of fluid consisting of 184 bbls. of oil and the remainder basic sediment and water. Tubing pressure was 900 pounds and casing pressure 2,475 pounds.

The Rainbow or Champagnolle field of Union County is due for some play, following the successful completion of J. R. Lockhart No. 2 Raulston for a good producer in the Crain sand. A gasser was brought in after the Lockhart completion which made gas and crude. Lockhart will drill several wells in the area, having staked three new ones this week.

Shreveport City Field Rules Are to Be Drafted

SHREVEPORT, La.—A committee of 11 men, picked by Mayor Sam S. Caldwell of Shreveport, will draft an ordinance regulating drilling in the Shreveport field, covering rulings for city lot drilling which do not conflict with state conservation regulations.

Formation of the committee followed a visit of several city officials to Oklahoma City where the effects of city lot drilling and the regulations were studied. It was found by the committee that in some cases the value of property on which wells were drilled, was reduced in value. These conditions made it clear to the investigators that issuing of permits should be closely controlled.

A *New* IDEAL ROTARY CHAIN

TYPE G No. 4 — No. 3

DESIGNED TO *Lower Chain Replacement Cost* ON AVERAGE DRILLING OPERATIONS

Ideal Type "G" Rotary Chain supplies the demand for a longer wearing chain made especially for moderate loads. Although it is lighter in weight and proportionately lower in price than the deep well Ideal Type "F" Spiraloy Chain, every part subject to wear is likewise made from wear resistant alloy steel, and has the same machining and arrangement for thorough lubrication.

Made to the established API Standards

API No. 3—48,000 pounds ultimate strength
API No. 4—112,000 pounds ultimate strength

Other Ideal Rotary Chains are:

API No. 3 Type "F" Spiraloy 75,000 pounds ultimate strength.

API No. 4 Type "F" Spiraloy 170,000 pounds ultimate strength.

No. 3⅛ Pitch Single 115,000 pounds ultimate strength.

No. 3⅛ Pitch Double 230,000 pounds ultimate strength.

NATIONAL

THE NATIONAL SUPPLY COMPANY

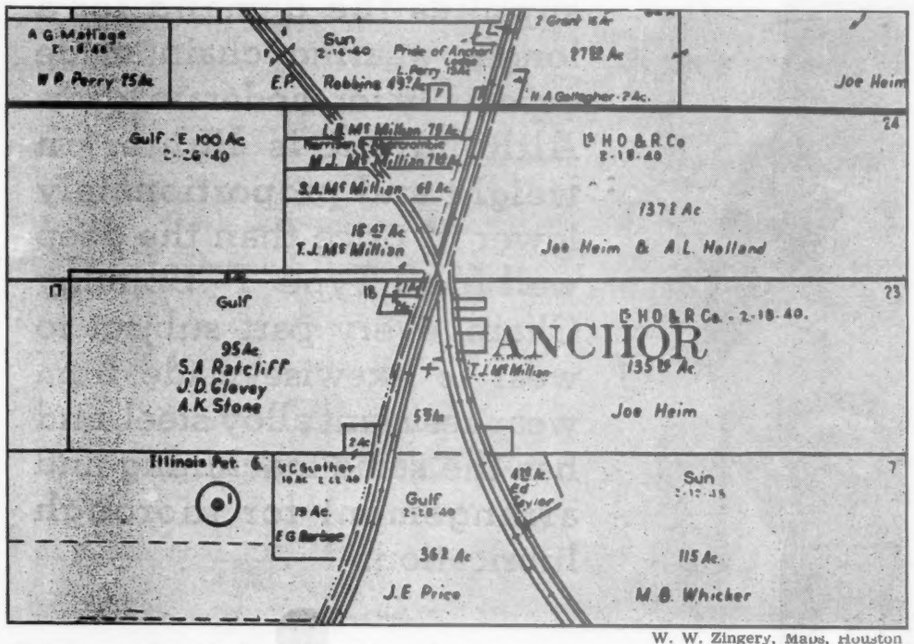
EXECUTIVE OFFICES: PITTSBURGH, PA.
DIVISION OFFICES: FT. WORTH, TEXAS; TULSA, OKLA.; TORRANCE, CALIF.
GENERAL SALES OFFICE: TOLEDO, OHIO

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Extension of Cotton Lake or New Pool, Chambers County

HOUSTON, Tex., Oct. 10.—The Cotton Lake area, Chambers County, Texas, is expected to receive a revival of drilling activity as a result of the completion of F. A. Gillespie and others No. 1 Kirby Petroleum Co., which opened a producing area about 9,000 feet northwest of the South Cotton Lake field, and about 2 miles southwest of the North Cotton Lake field. Production was obtained by perforating casing in the Marginulina zone at 6,415-41 feet, and the well is flowing an estimated 5 bbls. of pipe line oil per hour through a quarter-inch choke with tubing pressure 300 pounds and casing pressure 750 pounds. The Marginulina section was topped at 6,159 feet, and the Frio section, which carried salt water, was topped at 6,471 feet, and cored to a total depth of 6,523 feet. The well is in the Chambers County School Land Survey, and was drilled on a farm-out lease from the Atlantic Refining Co. Several major companies control protection acreage around the well and several locations are expected to be made.



W. W. Zingery, Maps, Houston

Anchor area, Brazoria County, and location of interesting wildcat being started by the Illinois Petroleum Co.

Cedar Point Extended

The Cedar Point field, offshore from Chambers County in Galveston Bay, was extended 1,300 feet to the south with the completion of Salt Dome Oil Corp. and Standard Oil Co. of Texas No. 2-118 State. Sand showing oil was topped at 5,959 feet and cored to a total depth of 6,000 feet where the well was completed for an initial production of 449 bbls. of oil in 17 hours, flowing through a quarter-inch choke, with tubing pressure 925 pounds. South of the town of Anahuac, Chambers County, Salt Dome Oil Corp. No. 1 Ogden, E. Douthit Survey, appeared to be a dry hole as the Frio section, topped at 7,520 feet, carried salt water. It is coring ahead to the contract depth of 8,000 feet where it is expected to be abandoned.

The Rosslyn area, 4,000 feet east of the Fairbanks field, Harris County, was given a doubtful appearance as Stanolind Oil & Gas Co. prepared to plug back No. 1 Schumacher after the well tested salt water with an unestimated amount of gas at 7,201-06 feet. This sand was believed to be the same as that from which Union Producing Co. No. 1 Goodykoontz, 4,000 feet north, was recently completed as a distillate producer. No. 1 Schumacher is a quarter mile northeast of Stanolind Oil & Gas Co. No. 1 Look, recently completed as an oil producer at 6,947-56 feet, and the hole has been plugged back to 6,950 feet and a test will be made of this sand. However, since only a slight showing was logged in this section, the well is given little chance of producing.

New Pay in Eureka

A new producing sand in the Eureka field, Harris County, was definitely proven for commercial production by the completion of Jack Frazier No. 1 Laura Lackner, 1,500 feet due west of distillate production. This well has been in process of completion for several weeks and was finally completed through perforated casing at 8,082-94 feet for an initial production of 476 bbls. of 39-gravity oil, plus 12 per cent water. The flow was made through a quarter-inch choke, tubing pressure 1,450 pounds and casing pressure 1,700 pounds. Gas-oil ratio was 2,600 to 1. The well is reported to have cut a fault, which is believed to extend in a northeasterly and southwesterly direction, just north of the main production which is found at approximately 7,600-7,700 feet.

Location for an interesting 8,500-foot wildcat test has been made in the Anchor area, Brazoria County, by the Illinois Petroleum Co. on the T. B. Masterson lease in the George Robinson Survey, about a mile southwest of the town of Anchor in the central part of the county. The area has been looked upon as favorable for several months, and protection acreage has been purchased by various companies.

The Hitchcock field, Galveston County, was extended a short distance to the southeast with the completion of Maco Stewart No. 6 fee, completed for an initial production of 475 bbls. per day through a quarter-inch choke from perforated casing at 5,140-45 feet. On the northeast side of the field, N. W. Hunter No. 3 Aarco is flowing salt water, with a small amount of oil, from sand topped at 6,164-71 feet, the total depth.

A second producer for the West field, Jackson County, was apparently in the making as Magnolia Petroleum Co. No. 4-A West, an offset to the discovery well, tested 500 pounds of pressure and recovered 300 feet of oily drilling mud. Sand, showing gas, was cored at 5,078-92 feet, and oil sand at 5,092-98 feet.

Another outpost is being started in the Sandy Point field, Brazoria County, by Stanolind Oil & Gas Co. The well is No. 1 Alexander Sharp in the C. S. Gorbett Survey No. 12, about 1,000 feet southeast of No. 4 Fite, a recent completion.

Louisiana Operations

In the Louisiana sector of the Gulf Coast, preparations were being made to test two important wildcats in Acadia and Lafourche parishes. Both wells have been drilled with much secrecy and sand records are not available.

Five miles north of the Tepetate field, on the Basile prospect, Acadia Parish, Atlantic Refining Co. No. 1 Klumpp, Section 12-7s-2w, is bottomed at 8,705 feet, with 7-inch casing cemented at 8,698 feet. It is reported that two sands have been logged, one said to be at 7,900 feet and the other below 8,400 feet. Casing was being perforated for a production test at the close of the week.

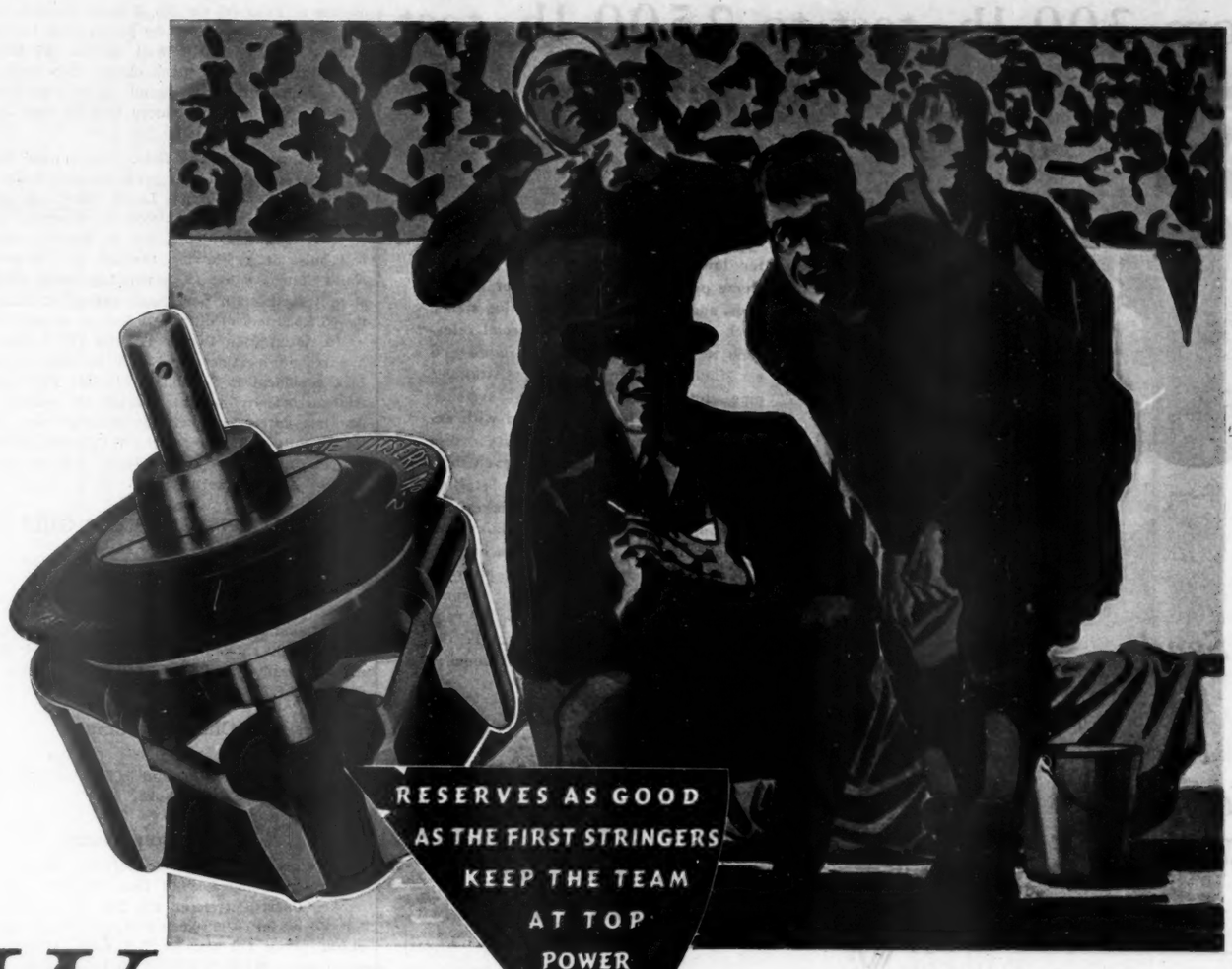
In Lafourche Parish, on the Golden Meadows prospect, Texas Co. No. 1 LaTerre, Section 1-20s-21e, is bottomed at 11,135 feet, and a short string of 5-inch casing was being cemented on bottom. It has been rumored for the past several weeks that this test has logged three sands capable of commercial production below 2,600 feet and that a fourth sand had been logged below 8,898 feet, at which point a protection string of casing was cemented. The short string of casing indicates that a test will probably be made below 10,000 feet. This prospect has been considered one of the most promising structures in the district, as geophysical information has indicated a field of major importance.

In the South Roanoke field, a production test of Continental Oil Co. No. 1 Sturdivant was holding much attention. A cement retainer was set at 9,038 feet and the formation was squeezed with cement. The hole has been drilled out to a total depth of 9,860 feet, and the well is being tested through perforated casing at 9,865-80 feet. It was originally planned to make a series of tests, starting at the bottom of the hole at 12,086 feet, bue due to excessive gas pressure, it was decided to test the most promising sand first. The well is in Section 36-10s-4w, on a farm-out lease from the Shell Petroleum Corp. which discovered the structure by completing No. 1 Sturdivant as a distillate producer in March, 1937.

In the Lake Barre field, Terrebonne Parish, Texas Co. No. 42 State, Section 40-21s-19e, showed evidence of opening distillate production below 10,000 feet when 1½ joints of distillate was recovered on a drill stem test through perforated casing at 10,460-10,507 feet. Screen is being set for completion. This well topped the salt at 11,301 feet and cored the formation to a total depth of 11,333 feet.

New Deep Pay

A new sand in the 10,000-foot pay was opened in the Lake Long field, Lafourche Parish, with the com-



With the MISSION VALVE

THE "RESERVES" ARE THE *REPLACEABLE BUSHINGS*

The Mission Principle of "PULL THE BUSHING AND SAVE THE SEAT" extends the life of Mission Valves and Seats at least 100%.

In many instances, their life has been extended 200% to 500% longer due simply to the operator giving attention to replacing the wear-taking bushings at the proper times.

●

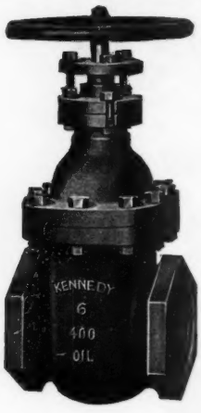
A MONEY-SAVING PRACTICE that has made MISSION VALVES LEADERS in every oil country

MISSION MANUFACTURING CO.
HUMBLE ROAD, HOUSTON, TEXAS
EXPORT OFFICE: 30 ROCKEFELLER PLAZA, NEW YORK

• SLIPS • VALVES • PISTONS • PISTON RODS • SWABS

From 300-lb. test to 2500-lb. test

a gate valve for every oil and gas industry service



THE Kennedy line of valves for the oil and gas industry includes types for low, medium, extra heavy and extreme pressures, with screwed or flanged ends, and with stationary or rising stems. Each type is designed with special reference to service requirements in oil and gas fields, refineries, pumping stations, pipe lines and distribution systems. Bodies are heavily proportioned with exceptional strength and rigidity; disc mechanisms have thoroughly proven their easy and positive operation; stuffing boxes, flanges and pipe end hexes are exceptionally deep. Standardizing on Kennedy Valves is a convenience because it gives you a single source for all your valve needs. More than that, it assures dependable operation and lastingly reliable service no matter what may be the fluid, pressure, temperature or frequency of operation.

The Kennedy Valve Mfg. Co.
Elmira, N. Y.

Send for the Kennedy Catalog

KENNEDY
VALVES-PIPE FITTINGS-FIRE HYDRANTS

"A veritable encyclopaedia on oil, invaluable as a work of reference"
—THE OIL and GAS JOURNAL

The SCIENCE of PETROLEUM

A Comprehensive Treatise of the Principles and Practice of the Production, Refining, Transport, and Distribution of Mineral Oil

Editors

B. T. BROOKS H. T. TIZARD A. E. DUNSTAN A. W. NASH

4 LARGE QUARTO VOLUMES

8½x11¼ inches 3192 pages Fully Illustrated Over Three Million Words

PREFACE BY WALTER C. TEAGLE

"This huge work will prove indispensable not only to the oil engineer, technologist and chemist, but to all individuals and companies interested in a complete reference work covering literally the entire world of petroleum." —*National Petroleum News.*

"It is packed with so much fine information from a fundamental and practical standpoint that it should be a part of the library of anyone interested even in the slightest degree in petroleum and its products. It is a masterpiece!" —Dr. Gustav Egloff.

Price $85.00 the Set

For Prospectus Please See Your Bookseller or Address

OXFORD UNIVERSITY PRESS 114 Fifth Ave., New York

pletion of Fohs Oil Co. No. 5 State, Section 64-17s-19e. Production was obtained by perforating the casing at 10,232-36 feet, and the well flowed 567 bbls. in 12 hours through a 12/64-inch choke. This sand is about 200 feet above the sand found in No. 4 State at 10,416-19 feet. The latter producer is 1,320 feet due north of No. 5 State.

The Quarantine Bay field, Plaquemines Parish, received a second producer with the completion of Gulf Oil Corp. No. 1-A Orleans Levee Board, Section 18-19s-17. The well was completed in a screen setting at 8,162-89 feet, total depth, for an initial production of 389 bbls. daily, flowing through a 7/32-inch choke. No. 4 State, Section 17, is running screen after a drill stem test through perforated casing at 8,120-49 feet, tested 2,630 feet of oil and 70 feet of oil and salt water.

In Assumption Parish, Humble Oil & Refining Co. has staked location for No. 1 Milliken Farwell Co., Inc., a wildcat in Section 79-14s-14e. This is the first wildcat activity in this parish in several months. Another interesting wildcat location was made by Burton-Sutton Oil Co. for No. 1 Valerean Simon, about 1½ miles north of the Gueydan field in Section 37-11s-1w, Acadia Parish.

COMPLETIONS ON TEXAS GULF COAST

(24-hour production)

Brazoria County

Hastings field: Stanolind Oil & Gas Co. No. 1-B Moore, perforated casing 6,062-77 feet, 145 bbls., quarter-inch choke. West Columbia field: Texas Co. No. 27 Abrams, sand 5,200-5,347 feet, 460 bbls., quarter-inch choke.

Chambers County

Cedar Point field: Standard Oil Co. of Texas and others No. 2-118 State, sand 5,959-6,000 feet, 449 bbls., 17 hours, quarter-inch choke.

Galveston County

Dickinson field: Atlantic Refining Co. No. 1 Potter, perforated casing 8,084-91 feet, 675 bbls., quarter-inch choke. Coast Petroleum Co. No. 10 M. Stewart, perforated casing 8,961-9,009 feet, 624 bbls., quarter-inch choke. Pure Oil Co. No. 3-A Sealy Hutchins, perforated casing 8,070-72 feet, 133 bbls., quarter-inch choke. Hitchcock field: Maco Stewart No. 6 fee, perforated casing 5,140-45 feet, 475 bbls., quarter-inch choke.

Hardin County

Batson field: Atlantic Refining Co. No. 2 Cruse, 5,127 feet, 264 bbls., quarter-inch choke.

Harris County

Clinton field: Stanolind Oil & Gas Co. No. 2 Weber, sand 4,016-35 feet, 278 bbls., quarter-inch choke. Eureka field: Jack Frazier No. 1 Lackner, perforated casing 8,082-94 feet, 476 bbls., plus 12 per cent salt water, quarter-inch choke. Fairbanks field: Amerada Petroleum Corp. No. 2 Kurasz, perforated casing 6,833-38 feet, quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 6 Keisling & Dixon, 6,046 feet, 600 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 2-A Tomball Townsite, perforated casing 5,535-56 feet, 17 bbls., quarter-inch choke.

Liberty County

Hardin field: George Echols No. 1 West, perforated casing 7,596-7,610 feet, 63 bbls., 13 hours, quarter-inch choke. Gulf Oil Corp. No. 2 Tullos, perforated casing 7,612-26 feet, 353 bbls., quarter-inch choke. Smith & McDannald No. 2 Rives, perforated casing 7,615-20 feet, 486 bbls., quarter-inch choke. Texas Co. No. 1 Cessna, 7,825 feet, 45 bbls., quarter-inch choke. Woodley Petroleum Co. No. 2 Emma Davis, 7,662 feet, 506 bbls., quarter-inch choke.

Matagorda County

Bay City field: Hammon Exploration Co. No. 2 Badouh, 8,200 feet, 200 bbls., quarter-inch choke.

Wharton County

Withers field: Bankline Oil Co. No. 1 Bennet-Broussard, sand 5,540-45 feet, 5 bbls., eighth-inch choke.

Waller County

Katy field: Stanolind Oil & Gas Co. No. 1 Young, perforated casing 7,340-60 feet, gas well.

TEXACO DEVELOPMENT CORPORATION

Subsidiary of The Texas Corporation

☆ ☆ ☆

Licensor of Patents
of The Texas Corporation
and Affiliated Companies

Address all inquiries to

TEXACO DEVELOPMENT CORPORATION

26 JOURNAL SQUARE, JERSEY CITY, NEW JERSEY

Southwest Texas District

By
F. L. SINGLETON

LaRosa and Ezzell Districts Developing Into Importance

CORPUS CHRISTI, Tex., Oct. 10. — The newly opened LaRosa field, Refugio County, loomed as of major importance, with two outpost wells north and east of production being completed after preliminary production tests showed evidence of commercial production.

Geophysical Service, Inc., No. 3 Rooke, about 6,500 feet north of oil production and 934 feet east of No. 1 Rooke, a distillate producer, is being completed in the discovery sand at 5,902-12 feet, where the well flowed pipe line oil on a recent drill stem test. The hole was cored to a total depth of 5,920 feet, and casing was cemented on bottom. In view of the fact that the sand was logged at the approximate level of the discovery oiler, a uniform sand condition has been confirmed. Offsetting the discovery oil well to the east, Geophysical Service, Inc., No. 1 Spaulding is also being completed at a total depth of 5,920 feet, after the well flowed oil on a 23-minute drill stem test at 5,900-06 feet.

Northeast of production, Rutherford Oil Corp. No. 1 Schirmer was coring ahead for the 5,900-foot sand after a drill stem test in the upper sand at 5,408-25 feet showed oil and salt water. Due north of the discovery gasser, in Section 46, Darby Petroleum Co. has spudded No. 1 Rooke. A new location was expected to be made by the Phillips Petroleum Co. which is reported to have purchased a one-half undivided interest in 400 acres of leases from the Trinity Petroleum Co. The consideration was reported to have been $50,000 in cash and the company has agreed to drill one free well. The acreage is in Sections 38. 46 and 1.

7,000-Foot Test

In Nueces County, and located 7½ miles northwest of Robstown, Stanolind Oil & Gas Co. staked location for a 7,000-foot wildcat to be drilled on the George Clark lease in the southwest corner of Lot 45, Nueces County Winter Garden subdivision. It is near the San Patricio County line and about 3 miles southwest of the Angelita field in San Patricio County.

Several new oil wells were added to the various fields in the Corpus Christi area. In the Luby field, Nueces County, Stanolind Oil & Gas Co. completed No. 14 and 15 Spessard for average producers from the 4,300-foot pay, while in the active South Alice field, Jim Wells County, Reese & Dunn No. 1 Stillwell and W. G. Coates No. 3 Stillwell were placed on the completed list. No. 1 Stillwell flowed 140 bbls. daily through a one-eighth inch choke from perforated casing at 5,304-14 feet, while No. 3 Stillwell was completed through perforations at 5,242-54 feet for an initial production of 110 bbls. daily, flowing through a one-eighth inch choke.

Location for two important outpost tests were made in the Sun and Kelsey fields in Starr and Jim Hogg counties. In the Sun field, Circle Oil Co. is moving in material for No. 1 Sabas Olivares, 439 feet from the south line, and 330 feet from the west line of the C.C.S.D. and R.G.N.G. Survey No. 241, about a mile north of the discovery well. At a hearing before the Railroad Commission the past week, a 40-acre spacing rule, with allowables based on 50 per cent potential and 50 per cent acreage was requested by the Sun Oil Co. Engineers for the Sun company stated that the producing horizon of the new field is the lower Frio formation, about 300 feet above the Vicksburg and the producing area was expected to cover 10,000 acres.

Interest in the Sun field is centered on two outpost tests which are nearing the discovery horizon. Sun Oil Co. No. 1 Olivarez, Section 239, one-half mile northwest, was coring in shale below 4,595 feet. This well has showed evidence of opening a new sand approximately 300 feet above the discovery pay, as a 7½-minute drill stem test at 4,500-55 feet tested 250 feet of drilling mud, cut with gas, and a slight showing of oil, and 375 pounds of working pressure. Hard sand was cored at 4,547-53 feet, with a fair odor of oil, and soft sand with an oil odor was logged at 4,553-55 feet. Southeast, about a mile, Sun Oil Co. No. 1 Spear, Section 274, is drilling below 4,200 feet.

In the Kelsey field, Jim Hogg County, Navarro Oil Co. staked location for No. 1 Guerra Estate, 7,000 feet southwest of Humble Oil & Refining Co. No. 2 Kelsey Bass, the discovery well. The well is 5,000 feet from the east line and 2,850 feet from the north line of the Santa Teresa grant.

New Shallow Gas Field

A shallow gas field was opened in the northwest corner of Starr County with the completion of Hagan, Stewart and others No. 2 Salinas. Casing was perforated at 1,657-61 feet, and the well flowed an estimated 1,250,000 feet of gas daily through a three-eighths inch choke, with tubing pressure 475 pounds and casing pressure 500 pounds. This is the second test drilled there by these operators. It is 1,756 feet northeast of a dry hole in the La Sarotosa Antonio Canales Salinas grant.

Development of the shallow Munson field, McMullen County, was attracting much attention as an active drilling campaign gets under way and locations for several important outpost tests are announced. Southwest of production, about a quarter of a mile, Smith & Cosner were preparing to complete No. 1 Nueces Land & Livestock Co. after oil sand was cored at 1,156-61 feet. Location is in B.S.&F. Survey No. 119. Two miles northeast of the field, Theodore Roziene Survey, Mills-Bennett Production Co. spudded No. 2-C Nueces Land & Livestock Co., while 1 mile east, in the B.S.&F. Survey, No. 115, Taylor Refining Co. staked location for No. 1 Nueces Land & Livestock Co.

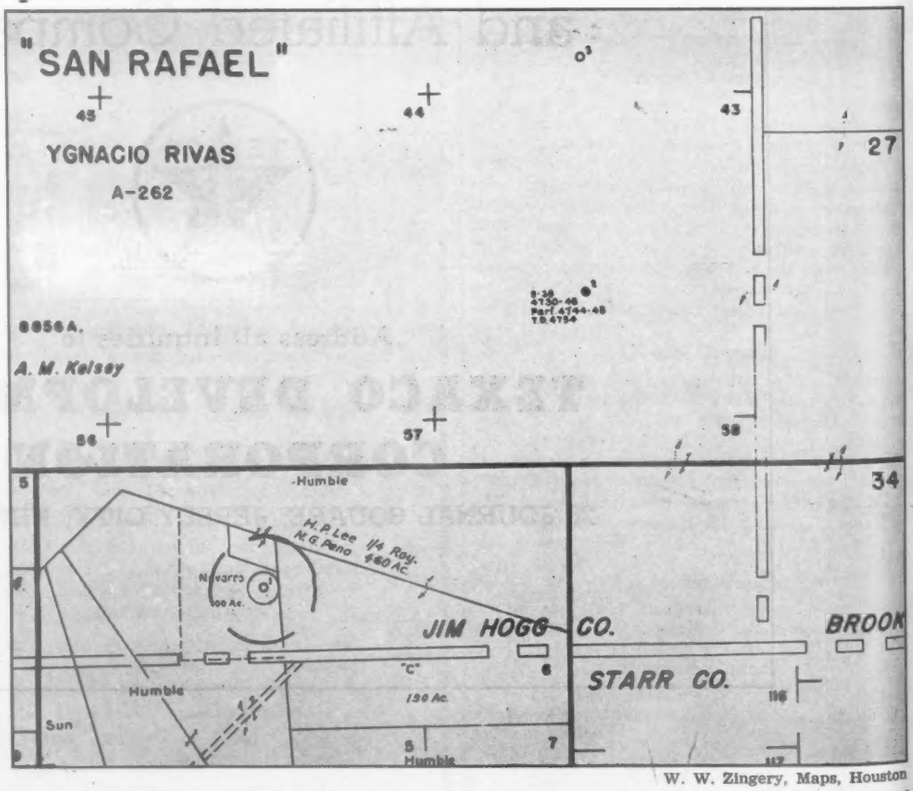
Ezzell Field Looks Important

In the same county and in the Ezzell field, Harry Ezzell No. 22 Ezzell, extended production about 1 mile southwest when it flowed 350 bbls. daily through a three-eighths inch choke with tubing pressure 200 pounds and casing pressure 400 pounds. This well was drilled to a total depth of 1,807 feet, logging gas sand at 1,507-19 feet, and oil sand at 1,529-34 feet. Production was obtained by perforating the casing with nine shots at 1,527-34 feet, and with 24 shots at 1,506-19 feet. This is one of the best producers completed in the field and marks the beginning of an extensive development on this structure which is undefined in many directions. Location has been made by the same operator for No. 23 Ezzell, Section 35, offsetting the new producer.

In the East Premont field, Jim Wells County, Magnolia Petroleum Co. No. 10 Seeligson, 1,320 feet west of production, tested 75 pounds of pressure and 6,600 feet of salt water on a drill stem test at 6,598-6,602 feet. The hole is being plugged back. Transwestern Oil Co. No. 1 Dunlap, an outpost test in the Kyle and Kyle Survey No. 181, is being watched closely as a slight showing of gas was logged at 5,465-75 feet.

Along the Balcones Fault Line, and in the Schattel

(Continued on Page 91)



W. W. Zingery, Maps, Houston

Newly opened Kelsey field in Jim Hogg County and important outpost test being started by Navarro Oil Co. on the Guerra estate

The REED B-R
WIRE LINE CORE BARREL
USING HARD FORMATION DRILLING BITS EXCLUSIVELY
PRODUCED RESULTS IN UTAH

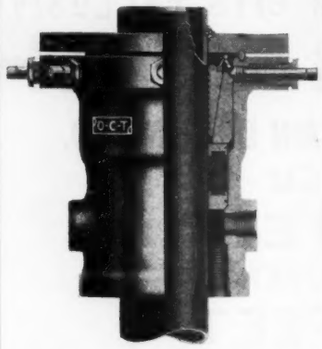
THE ROCKY MOUNTAIN DRILLING CO.
CORED
3232 FEET
AND RECOVERED
3144 FEET
AN AVERAGE RECOVERY OF
97.3%
ON MOUNTAIN FUEL & SUPPLY CO'S.
WILDE No. 1

GIVING THE OPERATOR A COMPLETE RECORD OF FORMATIONS DRILLED

Some of the Hard Formation Drilling Bits used on this well and a few samples of the long, clean cores recovered.

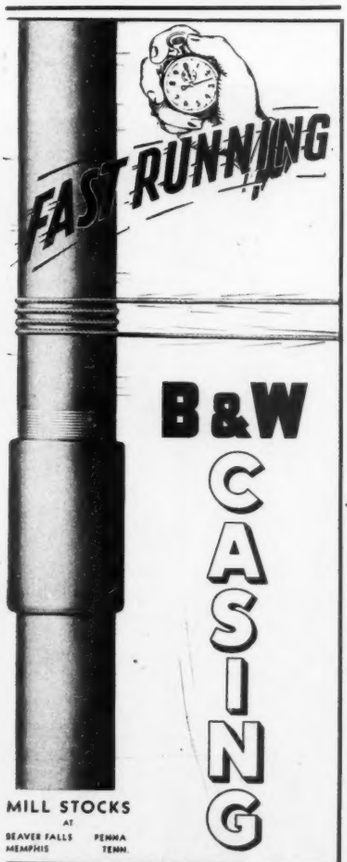
REED ROLLER BIT COMPANY

O-C-T
TYPE C-9-PS
SLIP SUSPENSION
CASING HEAD



Permits landing casing at any desired point. Permits drilling and running casing through blowout preventer equipment flanged above. Packing, slips, and slip bowl passes through blowout preventer to seat in body of head. Packing compressed by weight of casing. Hold-down screws aid in compressing packing. Available with or without welding flange, which holds casing down and effects auxiliary seal above slips. Test pressures up to 10,000 lbs.

OIL CENTER TOOL CO.
QUALITY O-C-T PRODUCTS
HOUSTON, TEXAS, U.S.A.
CABLE ADDRESS "OCENTOL"
"Sold Through Supply Stores"



MILL STOCKS
AT
BEAVER FALLS, PENNA
MEMPHIS, TENN.

THE BABCOCK & WILCOX TUBE COMPANY
BEAVER FALLS • PENNSYLVANIA

Among the Drilling

M. J. DELANEY DRILLING CO. of Dallas, under the name of Westmount Oil Co., has staked location for a new wildcat in Lea County, New Mexico. It will be No. 1 Amerada Petroleum Corp. - State, on acreage farmed out by Amerada Petroleum Corp. The test will be about 2 miles east of Hobbs and about 1¼ miles north and slightly west of an old failure by Western Drilling Co. Location for the Westmount test is in Section 12-17s-36e.

FIELDS-SIMS DRILLING CO. of Fort Worth, Tex., has completed a 151-bbl. distillate producer for Roeser & Pendleton in the Cayuga field of Anderson County, East Central Texas. The test was originally drilled to the deep Glen Rose formation, tested dry, and plugged back to the Woodbine sand for completion. It was later redrilled to the Glen Rose. The well is bottomed at 7,642 feet and shows a tubing pressure of 2,280 pounds. It is producing through a one-quarter-inch choke and is making an estimated 2,000,000 feet of gas daily.

JORDAN DRILLING CO. is rigging up material for a new test in the Houston County, Texas, Kitrell pool. The test will be No. 6 Boone Brothers, C. McEllison Survey. It is an east offset to a Wynne Drilling Co. producer.

YOUNG SEIBOLD DRILLING CO. is indicating a north extension and perhaps the largest well yet completed in the James pool of Young County, North Texas. It is the company's No. 1 R. A. Crawford, in Section 623, T.E.L. Survey. Saturation was encountered from 3,950-67 feet and casing was set at 3,780 feet. After acidization with 8,000 bbls. the well flowed 125 bbls. of oil the first hour through casing. Operators are running tubing to complete the well.

BRANNON & MURRAY, Coleman, Tex., contractors, have received a contract from C. Imes and C. F. Warren for a Ranger lime test in the Fry sand pool, Coleman County, Texas. It is in the J. C. Dibrell tract, L. W. Hicks Survey, about 600 feet north of a well which indicated Ranger lime production from 3,168 feet in 1927 and about 6,000 feet northwest of a well completed from the Marble Falls at 3,090 feet in 1919. Location was staked following a subsurface study by W. J. Murray, Abilene geologist.

H. O. GRACE of Stamford, Tex., has taken a contract with Roeser & Pendleton for a wildcat test in Haskell County, West Central Texas. It will be a 4,000-foot rotary test about 3 miles northwest of Rule and is on a reported seismograph high. It is on the Daughtry tract, Section 19, Wise C.S.L. Survey, about 2½ miles northeast of Indian States Oil Co. No. 1 Jones, a recent failure.

MID-UNION DRILLING CO. has completed a well for Hall & Briscoe, of Oklahoma City, No. 1 Merkle, in Section 32-8-4, Pottawatomie County, Okla. It also completed No. 1-B Preston, the first of four wells to be drilled for Shell Petroleum Corp. in the K.M.A. district, Texas, and No. 1-D Wilson for Reno Oil Co. in Hull-Silk pool, Texas. It is drilling No. 1 Judd for Republic Natural Gas Co. in S half SW Section 24-6-15, Texas County, Oklahoma, the south end of the Hugoton gas area. The company is also drilling No. 1 Joyce in Section 36-30-37, Grant County, Kansas, the first of three wells to be drilled for Panhandle Eastern Pipe Line Co. Derrick is being erected for No. 1 Towler in Section 20-30-37, Grant County, Oklahoma. Operations are being started on No. 32 Taylor for Humble Oil & Refining Co. in the K.M.A. district.

PENROD DRILLING CO. of Dallas, Tex., has eight heavy rigs active in the Cotton Valley field of Webster Parish, Louisiana, drilling for its parent company, Hunt Oil Co. During the past week the deepest test yet drilled in the field, Hunt Oil Co. No. 8 Babb, was completed in the Bodcaw sand after plugging back from total depth of 9,017 feet. Below the Bodcaw at 8,255 feet several new sand horizons were discovered in the lower Marine series. A second deep test, Hunt Oil Co. No. 1 Pardee, is bottomed at 8,777 feet.

J. C. TIPPETT, Shreveport drilling contractor, is completing Standard Oil Co. of Louisiana No. 1 Crumpler in the Village field of Columbia County, South Arkansas. The well, bottomed at 7,500 feet, is the third in the new field, extending production one location to the northwest.

ROWAN DRILLING CO. is nearing the contract depth on Salt Dome Oil Corp. No. 1 Ogden, a wildcat south of Anahuac in Chambers County, Texas. Salt water was cored in the expected pay horizon and the well will be abandoned after drilling to 8,000 feet.

CARTER DRILLING CO. opened a new producing district for the Cotton Lake area, Chambers County, Texas, with completion of F. A. Gillespie and others No. 1 Kirby Lumber Co. The

H. C. SMITH
ROCK BITS
INSURE INCREASED SPEED AND ECONOMY

H. C. SMITH ROCK BIT
available in sizes 5⅝" up to and including 13"

Send for Folder or see Composite Catalog

H C Smith Oil Tool Co.
GENERAL OFFICES AND PLANT
P. O. Box 431, Compton, Calif.
CLINT WALKER, Division Manager
714 Gulf States Bldg., Dallas, Texas
Illinois Service: Brown-Walters Co., Centralia, Illinois

NEW BEDFORD
PURE MANILA

"There is no better rope"

Standco
NO-SMOKE
STANDCO BRAKE LINING
Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1940, Composite Catalog.
STANDARD BRAKE LINING CO.

Contractors

new discovery is about 9,000 feet northwest of the South Cotton Lake field, and 2 miles southwest of the North Cotton Lake pool. Protection acreage around the well is held by numerous companies and several new locations are expected to be announced.

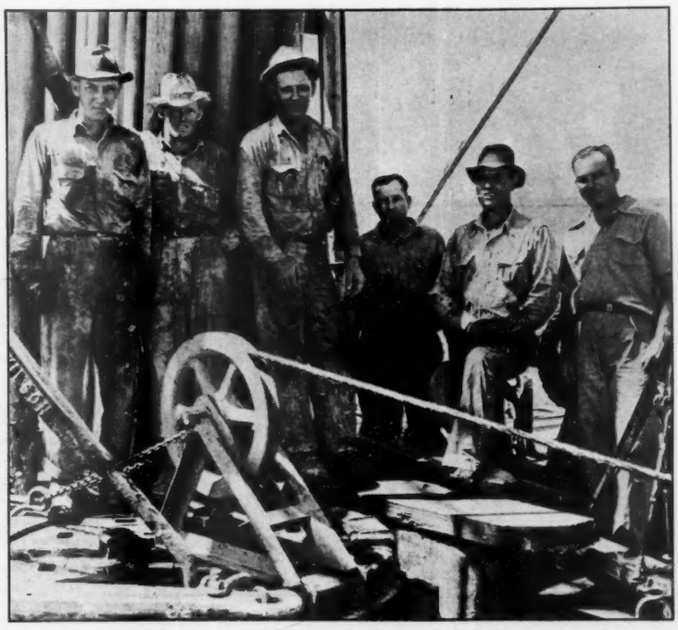
JACK FRAZIER opened a new producing horizon for the Eureka field, Harris County, Texas, with the completion of his No. 1 Lackner, 1,500 feet west of production. Production was obtained in a deep sand below 8,000 feet. He has another rotary running in this field and is engaged in drilling a wildcat in Montgomery County.

TRINITY DRILLERS, INC., received contract for another test to be drilled in the Eagle Hill field, Duval County, Texas, for Al Buchanan Production Co. J. W. Heard and others No. 1 Hungsdon, a wildcat in Refugio County, has been spudded. In the East Premont area, Jim Wells County, Transwestern Oil Co. No. 1 Dunlap logged a showing of gas at 5,465-75 feet, and is coring for the main pay expected below 6,500 feet.

ALLEN & MORRIS have established the newly opened LaRosa field, Refugio County, Texas, as a pool of major importance, as production tests were being made on two wells for I. J. Allen. No. 3 Rooke is being completed in the 5,900-foot sand, while No. 1 Spaulding is standing cemented after the well flowed pipe line oil on a drill stem test. Both tests provide important extensions. A third operation has been started for Darby Petroleum Co. Other operations are reported at the Luby field for Seaboard Oil Co., at Clara Driscoll for Texas Co. and at Greta for the Missouri Pacific "relief" well.

HAWKINS & HOWELL of Tyler, Tex., are preparing to move in machinery for Tyler & Smith No. 1 Phoenix Realty Co., 1½ miles south of Gossett and in the W. G. Hill Survey of Kaufman County, East Central Texas. It is the first of two tests planned by the operators. Rig is being moved from Martin No. 1 fee, recent failure northeast of Kemp, also in Kaufman County.

ZODIAC OIL CO. and Gulf States Oil Co. have started a second test in the Pendroy district, Teton County, Montana, with the Zodiac company in charge of the operation and using a portable rotary. It is No. 1 L. O. Kellogg, on the NE NW NE Section 23-28n-5w, and is located 2½ miles northeast of the Gulf States Oil Co. No. 1 Coffee-Wallenstein. The latter, a Devonian test, has been held up at 2,525 feet with parted casing. The string has been shot off and pulled. Hole will be plugged back and whipstock set to drill by the portion not recovered.



Crew at Pan American No. 2 Cook, Alice Field, Texas

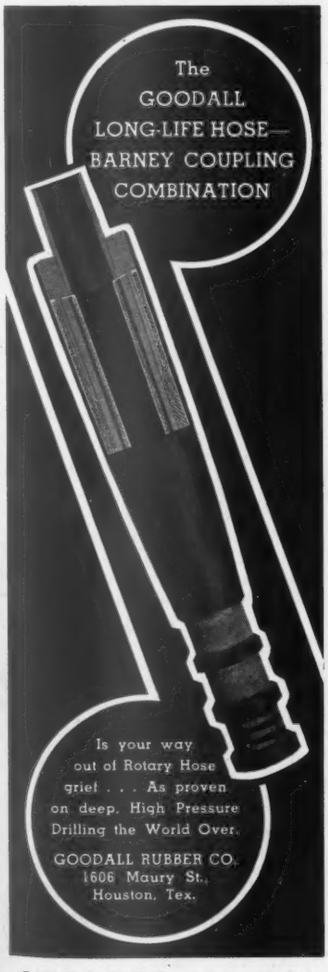
RED BALL CUTTING SERVICE

At the Head of the Table in Our Business

The RED BALL Cutting Service has consistently cut and recovered more pipe than all other cutting services combined in the territory where we operate.

J. S. Abercrombie Co.
21st FLOOR GULF BLDG.
HOUSTON – TEXAS

The GOODALL LONG-LIFE HOSE—BARNEY COUPLING COMBINATION



Is your way out of Rotary Hose grief . . . As proven on deep, High Pressure Drilling the World Over.

GOODALL RUBBER CO.
1606 Maury St.,
Houston, Tex.

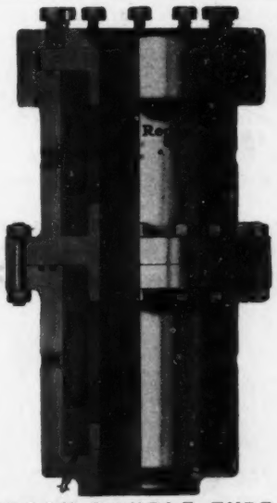
REED'S 'B-R' DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

ANY NUMBER OF CORES CAN BE TAKEN (REGARDLESS OF DEPTH) WITHOUT REMOVING THE DRILL PIPE

REED 'B-R' Drill Collar and 3-Blade Drilling Bit with Core Barrel in position

HARD FORMATION HEAD (INTERCHANGEABLE WITH SOFT FORMATION HEAD)

REED ROLLER BIT CO.



REGAN DOUBLE TYPE K BLOWOUT PREVENTER

To allow free passage for drilling bits, fishing tools and other devices, the Regan Type K Blowout Preventer permits the full opening of the casing to be maintained through the pack-off unit. When properly applied it can be used to effect a complete shut-off when tools are out of the hole. Pressures from 1,000 to 3,000 lbs. Made in either single or double units. For running in and out of hole under pressure control. Ask for Bulletin.

Regan Forge & Engineering Co.
San Pedro California

Mid-Continent Office—1502 Maury St., Houston
Okla. Rep.—Bovaird Supply Co., Tulsa
Kansas Rep.—Bovaird Supply Co., Wichita
N. Y. C. Office—17 Battery. G. R. Woods, Rep.

California Field Report

By
L. P. STOCKMAN

Deep Ford Zone May be the Next Wilmington Objective

LOS ANGELES, Calif., Oct. 10.—The next move of importance in the Wilmington field aside from the starting of tideland development will be the initiation of deep zone development involving exploitation of the Ford zone, which has been only a minor factor from a drilling standpoint. Operators have centered their attention on the upper and lower Terminal zones which have yielded the greater part of the field's production. The upper or Ranger zone has been produced in a number of wells, especially where the Terminal zone is absent, but for the most part the Terminal is being developed in preference to the Ranger because of its greater production and higher gravity oil. In the Long Beach Harbor section of the Wilmington field wells producing from the Ranger and upper and lower Terminal zones simultaneously are the exception, although a large number of wells have been cased and rigged up to permit that procedure. The established allowable maximum of 400 bbls. daily per well practically precludes producing from the Ranger zone along with the Terminal zone due to the relatively small allowable. The shutting in of the Ranger zone in the harbor and Ford-Drawbridge area is especially interesting in view of the fact that Union Pacific Railroad Co. is drilling a well to the Ranger zone for gas injection. This well, which will be used for repressuring the Ranger zone, is designated as No. A and should be completed in the near future.

No. 7-A Nelson of Sunray Oil Co., a recent completion, flowing 745 bbls. of very clean 29.7-gravity oil through a 24/64-inch bean per day from 5,627 feet, indicates that clean substantial production can be expected from the Ford zone with proper precautions and careful selection of well location with respect to structure. The successful completion of this well has revived interest in the Ford zone and two operators have started preparations for deep zone exploitation. The town lot district, located in the extreme western end of the field, is fairly well depleted, and the Ford zone offers practically the only chance of stimulating production there.

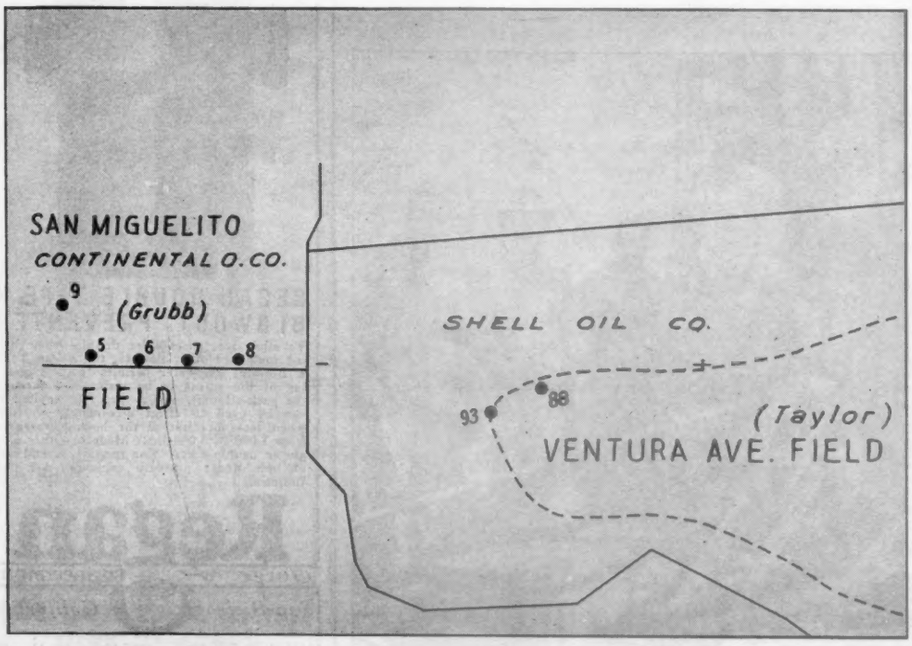
Operators will order full speed ahead if subsequent drilling proves the Ford zone productive over a larger area than anticipated and thus another aggressive drilling campaign appears possible. Initial attempts to develop deep production in the Ford zone will be started within the next week or 10 days by Pacific Western Oil Co. which will redrill and deepen No. 1 Community in the Patten-Blinn area.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	October 1		September 23			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	70,424	10,061	777,914	129,788
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	.....	.....	2,437,678	3,373,933
Kerosene	.....	.....	.....	.....	257,005	328,907
Foreign exports—						
Crude oil	433,956	61,994	.....	.....	16,986,222	11,257,127
Fuel oil	274,173	39,168	255,279	36,468	6,855,256	10,950,020
Diesel and gas oil	.....	.....	.....	.....	4,658,810	5,981,354
Gasoline	131,075	18,725	.....	.....	5,946,771	6,296,858
Kerosene	27,272	3,896	137,491	19,642	852,318	1,746,313
Lubricants	.....	.....	29,035	4,148	173,388	12,984
Other unfinished oil	.....	.....	.....	.....	.....	910,122
Coastwise-domestic—						
Crude oil	160,218	22,888	195,606	27,944	9,146,504	3,810,498
Fuel oil	442,424	63,203	177,524	25,363	8,779,116	11,637,490
Diesel and gas oil	14,150	2,021	30,365	4,338	1,175,680	1,768,154
Gasoline	238,214	34,031	242,666	34,667	11,196,259	11,803,775
Kerosene	12,189	1,741	14,672	2,096	202,369	313,125

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	196,644	152,932
Gasoline	.....	.....	.....	.....	25,409	25,778
Kerosene	.....	.....	.....	.....	16,124	72,750
Asphalt	.....	.....	.....	.....	490,039	351,394
Lubricants	.....	.....	.....	.....	16,905	25,522
Foreign exports—						
Crude oil	66,214	9,459	38,991	5,713	4,486,735	2,236,637
Fuel oil	102,235	14,605	84,755	12,108	2,127,889	1,737,346
Diesel and gas oil	25,156	3,594	29,207	4,172	2,219,422	2,457,484
Gasoline	161,911	23,130	.....	.....	4,502,574	4,099,834
Kerosene	28,145	4,021	.....	.....	696,099	778,893
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	4,241	606	40,867	5,838	404,538	455,797
Coastwise-domestic—						
Fuel oil	114,802	16,400	85,822	12,260	4,531,878	4,955,566
Diesel and gas oil	49,981	7,140	38,914	5,559	1,164,744	1,011,920
Gasoline	183,215	26,174	139,255	19,894	6,040,447	3,909,440
Kerosene	21,214	3,031	14,803	2,115	421,045	224,946



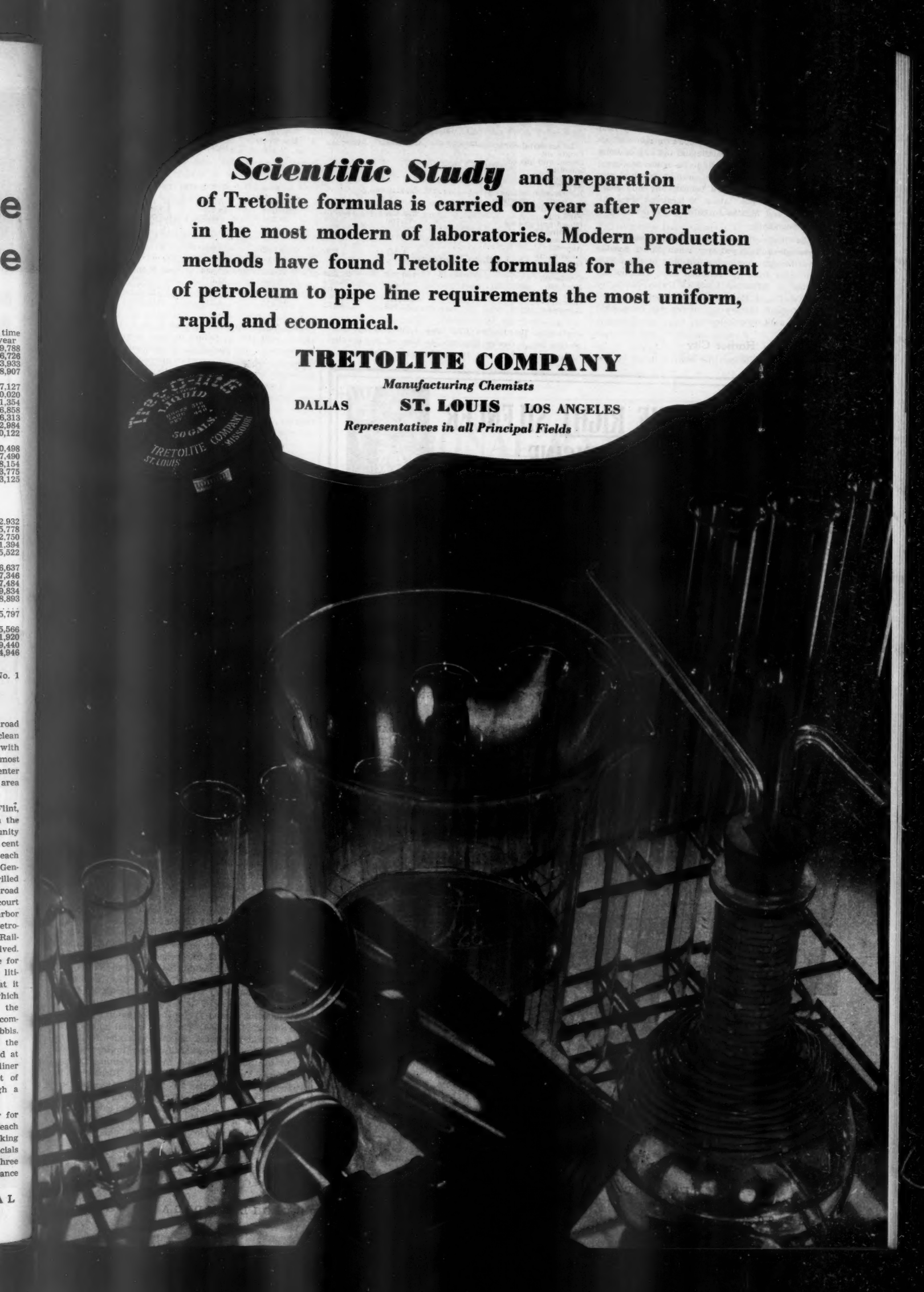
Completions in eastern San Miguelito and western Ventura Avenue strengthen the possibility that the Grubb property is a part of the Ventura Avenue field

Wilmington Completions

In the Wilmington field, Union Pacific Railroad Co. completed No. 91, flowing 3,290 bbls. of very clean 28.1-gravity oil per day from the Terminal zone, with bottom of the hole at 4,042 feet. This well is almost 1 mile south and about two locations east of the center line of Anaheim and Ford streets, and in an area where large production could be expected.

General Petroleum Corp. completed No. 1 Flint, flowing 240 bbls. of 28.4-gravity oil per day from the Ford zone at 5,670 feet, and No. 19 Harbor Community flowing 293 bbls. of 27.3-gravity oil cutting 3 per cent from the Terminal zone at 4,060 feet. The Long Beach Harbor Commission refused to issue a permit to General Petroleum Corp. covering three wells to be drilled on a lease taken from the Southern Pacific Railroad Co. and attorneys of General Petroleum went into court seeking a writ of mandamus. The Long Beach Harbor Commission denied the application of General Petroleum Corp. on the grounds that Southern Pacific Railroad Co. did not have title to the 14 acres involved. Superior Judge Wilson set October 18 as the date for a hearing of the case which may result in long litigation, as the city of Long Beach contends that it owns the acreage involved. Richfield Oil Corp. which has pursued an aggressive drilling program in the Wilmington field during the past two months completed No. 17 Pacific Dock this week flowing 297 bbls. of relatively clean 17.2-gravity oil per day from the Ranger zone. This new well which was bottomed at 3,295 feet and finished with 353 feet of 6⅝-inch liner including 303 feet of perforated and 3,248 feet of 2½-inch tubing was brought in flowing through a 16/64-inch bean.

Signal Oil Co. which was the successful bidder for development of the tidelands located in the Long Beach Harbor section of the Wilmington field is making preparations to begin immediate work and officials expect to begin derrick construction for the first three wells before the close of this week. In accordance


Scientific Study and preparation of Tretolite formulas is carried on year after year in the most modern of laboratories. Modern production methods have found Tretolite formulas for the treatment of petroleum to pipe line requirements the most uniform, rapid, and economical.
TRETOLITE COMPANY
Manufacturing Chemists
DALLAS ST. LOUIS LOS ANGELES
Representatives in all Principal Fields
50 GALS.
TRETOLITE COMPANY
ST. LOUIS
MISSOURI

with deals made several months ago, Signal Oil Co. has a number of locations available on property held in fee by Union Pacific Railroad Co. as a result of an agreement between Union Pacific and the city of Long Beach. All of the tideland wells to be drilled by Signal Oil Co. under the terms of the recently executed contract will be whipstocked out beneath the ship channels and turning basins. About 90 locations are available but the exact number to be drilled depends upon future developments.

Superior Oil Co. finished its second producing well on the Seaside School property when No. 1 Seaside School was brought in flowing 670 bbls. of clean 28.3-gravity oil daily from the Terminal zone, with bottom of the hole at 3,919 feet. No. 11 Union Pacific of Bankline Oil Co., a Ranger zone completion, flowed 190 bbls. of clean 16.9-gravity oil per day from 2,945 feet through a 14/64-inch bean.

Harbor City

The Texas Co. extended the eastern limits of production in the Harbor City area 1,150 feet by completing No. 1 Oakley flowing 345 bbls. of 29.2-gravity oil cutting 2 per cent from 5,197 feet. This well is located higher structurally than D. & B. Oil Co.'s discovery well and its failure to show larger production is somewhat disappointing. Considerable new work is being started but general interest in the area is definitely cooling because of the failure of wells to show larger initials and sustained production. Silverado Petroleum Co. No. 1 Lomita, another completion listed in the Harbor City area, has been completed flowing 245 bbls. of relatively clean 29.3-gravity oil per day from 5,266 feet.

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

	October 1		September 23			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	70,424	10,061	777,914	129,788
Diesel and gas oil	.....	.....	.....	.....	196,644	329,658
Gasoline	.....	.....	.....	.....	2,463,087	3,399,711
Kerosene	.....	.....	.....	.....	273,129	401,657
Asphalt	.....	.....	.....	.....	490,039	351,394
Lubricants	.....	.....	.....	.....	16,905	25,522
Foreign exports—						
Crude oil	.....	.....	38,991	5,713	.....	13,493,764
Fuel oil	376,408	53,773	340,034	48,576	8,983,145	12,687,366
Diesel and gas oil	25,156	3,594	29,207	4,172	6,878,232	8,438,838
Gasoline	292,986	41,855	.....	.....	10,449,345	10,396,692
Kerosene	55,417	7,917	137,491	19,642	1,548,417	2,525,206
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	4,241	606	69,902	9,986	577,926	468,781
Other unfinished oil	.....	.....	.....	.....	.....	910,122
Coastwise-domestic—						
Crude oil	160,218	22,888	195,606	27,944	9,146,504	3,810,498
Fuel oil	557,226	79,604	263,346	37,621	13,310,994	16,633,056
Diesel and gas oil	64,131	9,162	69,279	9,897	2,340,424	2,780,074
Gasoline	421,429	60,204	381,921	54,560	17,236,706	15,713,215
Kerosene	33,403	4,772	29,475	4,211	623,414	538,071

Torrance

The period of flush production in the Lomita section of the Torrance field is past although there are still a number of locations which should yield fairly good wells. Operators are unable to increase current production despite the completion of several new wells each week. Standard Oil Co. completed No. 1-14 Marble, flowing 534 bbls. of 25.9-gravity oil and 5 bbls. of water per day from 4,985 feet and No. 2-7 Marble flowing 568 bbls. of 25.9-gravity oil and 12 bbls. of water daily from 4,980 feet. Both wells are producing about 250,000 feet of natural gas along with the crude oil. Standard has two other wells on this lease headed down to the pay and has rigs up for three more. Del Amo Oil Co. No. 1 Denber, completed at 4,900 feet after the hole had been carried down to 4,920 feet and then plugged back, was good for only 110 bbls. of 18.1-gravity oil cutting 30 per cent. No. 11 Wilson Community of the Texas Co. was finished, pumping 23 bbls. of clean 26.1-gravity oil daily from 4,980 feet, after the hole had been carried down to 5,026 feet and then plugged back.

Coastal Area

Continental Oil Co. has completed another exceptionally large flowing well in the San Miguelito field of Ventura County when No. 9 Grubb in Section 24-3-24 was brought in flowing 2,140 bbls. of clean 30.7-gravity oil and 2,300,000 feet of natural gas per day through a 1-inch bean under a tubing pressure of 420 pounds and a casing pressure of 1,175 pounds. It is producing from 1,385 feet of oil zone at a total depth of 7,000 feet. There is still an undrilled gap between the wells of Continental Oil Co. at San Miguelito and those of Shell Oil Co. on the Taylor lease in the extreme western end of the Ventura Avenue field. In the Ventura Avenue field, Tide Water Associated Oil Co. completed No. 127 Lloyd flowing 1,904 bbls. of relatively clean 29.4-gravity oil and 2,250,000 feet of gas daily from the 57 zone at 9,900 feet. This new well was brought in flowing through a 72/64-inch bean and shows a tubing pressure of 140 pounds and a casing pressure of 950 pounds. Tide Water Associated has resumed drilling operations in No. 11 McGonigle and at 10,418 feet has opened up a total of 973 feet of oil zone. It was given a preliminary production test a week or so ago at which time it flowed 1,120 bbls. of oil and 717,000 feet of natural gas from a depth of 10,125 feet. The bit was still going ahead later in the past week and all indications point to completion of an exceptionally large flowing well.

In the South Mountain field of Ventura County, the Texas Co. completed No. 5 Yale Richardson in Section 13-3-21 pumping 260 bbls. of 23.8-gravity oil cutting 6 per cent from 4,030 feet. This well which was gravel packed before completion was carried down to 6,702 feet in search of deeper production but was plugged back to the completion depth.

Canal—Ten Section

Ohio Oil Co. completed another excellent producing well in the Canal field of Kern County this week when

MAXIM HAS THE RIGHT SILENCER FOR EVERY ENGINE

MAXIM DO4 SILENCERS AT PHOENIX

Guesswork is eliminated when you buy a MAXIM. From the wide variety of models available, there is a MAXIM SILENCER to fit your exact requirements, whether your engine operates on oil, gas, gasoline, or steam.

HARTFORD, CONN. THE MAXIM SILENCER COMPANY DALLAS, TEX.

The superior protection that Eagle Sublimed Blue Lead gives surely shows up on a company's cost sheets! It doesn't crack or scale—stops rust chemically. Meets Federal and A. S. T. M. requirements. Covers 600 to 800 sq. ft. of average-smooth metal per gallon. Comes in paste form or may be obtained from paint manufacturers by specifying Eagle Sublimed Blue Lead mixed to painting consistency.

THE EAGLE-PICHER LEAD COMPANY . . . CINCINNATI, OHIO

No. 8-E Kern County Land in Section 13-30-25 was brought in flowing 1,720 bbls. of clean 37.4-gravity oil and 1,240,000 feet of natural gas per day through a three-fourths inch bean from the Stevens sand at a depth of 8,292 feet. This new well which is being severely beaned back showed a tubing pressure of 825 pounds and a casing pressure of 1,270 pounds during the short flow test following completion.

Kern County

In the Mount Poso field of Kern County, Ring Oil Co. completed No. 7 Bowles, pumping 221 bbls. of clean 15.3-gravity oil per day from 1,740 feet and will probably have No. 3 Rogers Jones on production within another few days. In the Round Mountain field, Honolulu Oil Corp. completed No. 59 in Section 20-28-29 pumping 130 bbls. of 20.9-gravity oil cutting 4 per cent daily from 1,960 feet after the hole had been finished with 301 feet of 6⅝-inch liner including 253 feet of perforated landed at 1,925 feet. The crew has been moved to No. 74 in Section 18-28-29 and drilling started. Shell Oil Co. has concluded drilling operations on No. 4 Olcese-Lilly in Section 21-28-29 at 1,689 feet and is preparing to bail and put the well on the beam.

In the Kern River field, Helm & Smith completed No. 8-A in Section 34-28-28 doing 16 bbls. of 15.2-gravity oil, cutting 9 per cent, from a depth of 670 feet.

(Continued on Page 94)

Southwest Texas Fields

(Continued from Page 84)

area, Frio County, Humble Oil & Refining Co. was preparing to rig up pumping equipment after No. 1 Schley failed to flow from the Austin chalk at 4,696-4,800 feet. The formation was treated with acid and during the week the company has been swabbing the hole, recovering 1½ bbls. of oil per hour, plus a small amount of wash water and acid water. This well was drilled to the Edwards lime at 5,309 feet and the hole was plugged back to 4,800 feet after a drill stem test in the lime section showed sulfur water.

In Caldwell County, M. R. Tinkle No. 2 S. M. Blackwell, John Roe Survey, is being tested and looms as a small pool opener in the Edwards lime. The well is testing the Edwards lime at 2,334-35 feet and the operator is preparing to acidize the hole after it was pumped dry. Approximately 50 bbls. of oil was recovered before the hole was pumped dry.

SOUTHWEST TEXAS COMPLETIONS

(24-hour production)

Bexar County

Von Ormy field: Tom Owens and others No. 6 Fest, 721 feet, 33 bbls., pumping.

Caldwell County

Dale field: Ralph Ogden No. 5-A Lackey, 2,521 feet, abandoned. Salt Flat field: Wiegand Brothers No. 4-A Briscoe, 2,708½ feet, 44 bbls., pumping.

Duval County

Benavides field: Arkansas Fuel Oil Co. No. 11 Rossi, perforated casing 3,894-98 feet, 170 bbls., eighth-inch choke. Reynosa Oil Co. No. 9 Wilson, sand 3,890-96 feet, 70 bbls., 5/32-inch choke. Casa Blanca field: Magnolia Petroleum Co. No. 11 Duval County Ranch Co., perforated casing 1,169-76 feet, dry gas well. Fitzsimmons field: Porter Drilling Co. No. 1-C Clara Driscoll, perforated casing 4,334-45 feet, 135 bbls., 9/64-inch choke. Hoffman field: Cox & Hamon and others No. 42 Cuellar, sand 2,828-35 feet, 171 bbls., half-inch choke; No. 46 Cuellar, sand 2,796-2,805 feet, 243 bbls., half-inch choke; No. 4 Hoffman-Fair, sand 2,754-63 feet, 201 bbls., jetting. Magnolia Petroleum Co. No. 14 Weil, sand 2,793-2,805 feet, 6 bbls. per hour, jetting. Tesoro field: Arkansas Fuel Oil Co. No. 3 Cuellar Brothers, perforated casing 5,070-92 feet, 108 bbls. oil and 10 bbls. salt water 12 hours, 7/32-inch choke.

Guadalupe County

Darst Creek field: Texas Co. No. 8 Willie Henry, 2,677 feet, 96 bbls. oil, 71 bbls. sulfur water, pumping.

Jim Hogg County

Las Animas field: Darby Petroleum Co. No. 5-B Holbein, perforated casing 1,829-32½ feet, 120 bbls., half-inch choke.

Jim Wells County

South Alice field: Blanco Oil Co. and others No. 2 Rattan, perforated casing 5,290-5,300 feet, 15 bbls., three-sixteenths inch choke. Dan Auld No. 1 Lindsay & Reed, 5,500 feet, abandoned.

McMullen County

Ezzell field: Harry Ezzell No. 22 Ezzell, perforated casing 1,506-27 feet, 350 bbls., three-eighths inch choke. Munson field: Petroleum Producers No. 1 Society for Propagation of the Faith, 1,350 feet, abandoned. Calliham field: Marion Production Co. No. 6 Lark, 1,058 feet, 7½ bbls., pumping.

Refugio County

Refugio field: W. F. Morgan No. 2-D Mitchell, perforated casing 5,430-34 feet, 135 bbls., plus 20 per cent water. W. F. Morgan No. 3-D Mitchell, perforated casing 5,800-03 feet, 35 bbls. distillate, three-sixteenths inch choke. Tomoconnor field: Copano Oil Co. No. 17-B O'Connor, sand 5,825-5,923 feet, 551 bbls., quarter-inch choke. Hewitt & Dougherty No. 79 Lambert 5,916 feet, 563 bbls., quarter-inch choke. Quintana Petroleum Co. No. 72-A O'Connor, 5,925 feet, 1,365 bbls., three-eighths inch choke.

San Patricio County

East White Point field: Texas Co. No. 2 Owens, perforated casing 5,680-81 feet, 50 bbls. oil, plus 25 per cent salt water, 11/64-inch choke. Plymouth field: Plymouth Oil Co. No. 10s-C Welder, perforated casing 5,639-43 feet, 142 bbls., eighth-inch choke.

Starr County

Barbacoas field: Graham & Moss No. 1 Guiterrez, perforated casing 2,915-25 feet, dry gas well. Ricaby field: G. E. Dodd No. 1-A Wardner, perforated casing 1,750-58 feet, 50 bbls., pumping.

Victoria County

Keeran field: Barnsdall Oil Co. No. 1 Keeran, perforated casing 7,002-10 feet, 116 bbls., 5/32-inch choke. Heyser field: Gulf Oil Corp. No. 8-B Taylor, 5,497 feet, 157 bbls., 7/64-inch choke.

Zapata County

Comitas field: J. P. Nash No. 33 Haynes, sand 1,130-31 feet, 26 bbls., pumping.

NATIONAL BANK OF TULSA

TULSA, OKLAHOMA

Statement of Condition, September 28, 1938

RESOURCES

Cash and Due from Banks	$33,515,989.83	
U. S. Government Securities	14,831,725.85*	
Other Bonds and Warrants	5,306,524.83*	$53,654,240.51
Loans and Discounts		15,631,150.09
Overdrafts		2,355.36
Income Receivable Accrued		141,429.60
Stock in Federal Reserve Bank		180,000.00
Investment in Bank Premises		2,894,142.00
TOTAL		$72,503,317.56

LIABILITIES

Deposits		$65,776,464.13
Income Collected not Earned		57,343.96
Interest, Taxes, Etc., Accrued		139,887.07
Reserve for Preferred Dividends		10,083.24
Capital—Preferred	$1,375,000.00	
Capital—Common	2,375,000.00	
Surplus	2,250,000.00	
Undivided Profits and Reserves	519,539.16	6,519,539.16
TOTAL		$72,503,317.56

* Of the total of $20,138,250.68 U. S. Government Securities and Other Bonds and Warrants $6,799,750.00 par value mature after five years.

The Oil Bank of America

Member Federal Deposit Insurance Corporation

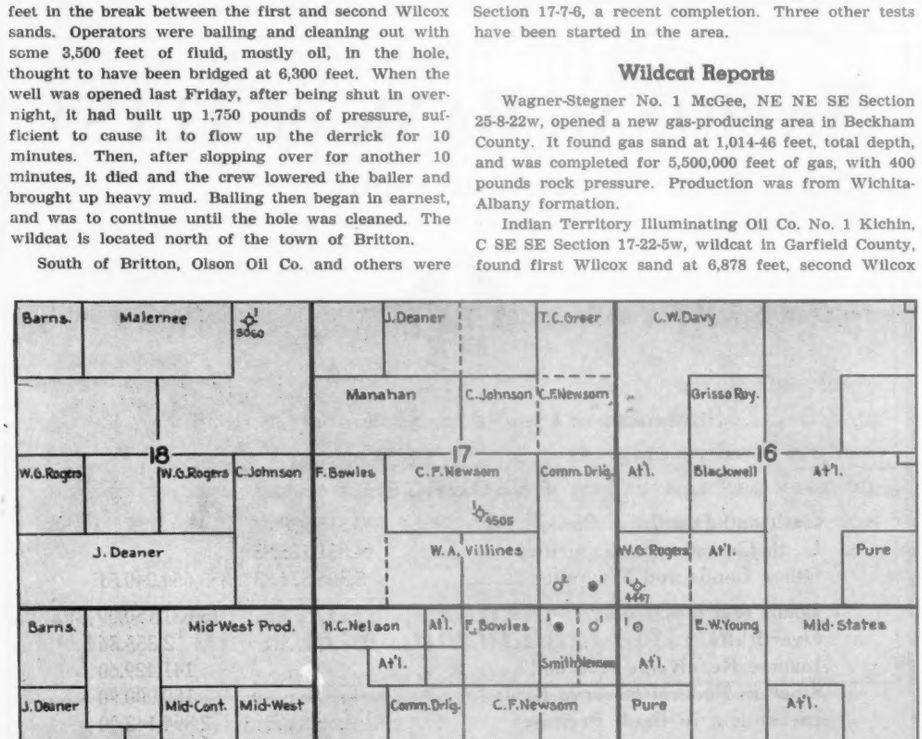
Oklahoma Operations

By
DAL DALRYMPLE

Britton Wildcat Opens Pool; Record Well in Cement Area

Another strike in the Britton area of Oklahoma County was indicated at Kerlyn Oil Co. and others No. 1 Orphanage, SE SW NW Section 21-13-3w, an Oklahoma wildcat that was thought to be good for 250 or 300 bbls. of oil daily. It was bottomed at 6,702 feet in the break between the first and second Wilcox sands. Operators were bailing and cleaning out with some 3,500 feet of fluid, mostly oil, in the hole, thought to have been bridged at 6,300 feet. When the well was opened last Friday, after being shut in overnight, it had built up 1,750 pounds of pressure, sufficient to cause it to flow up the derrick for 10 minutes. Then, after slopping over for another 10 minutes, it died and the crew lowered the bailer and brought up heavy mud. Bailing then began in earnest, and was to continue until the hole was cleaned. The wildcat is located north of the town of Britton.

South of Britton, Olson Oil Co. and others were preparing to start work at their No. 2 well, SW SW NE Section 4-12-3w, west offset to the No. 1 Vanek discovery well completed a few weeks ago for 300 bbls. of oil daily at plugged-back depth of 6,768 feet.



Mid-Continent Map Co., Tulsa

Two wells have found production and three are drilling in the Newsom or Edgeman area recently opened in the Little River district, Seminole County

Another feature of the week's field activity in Oklahoma was completion of the largest producer yet drilled in the 20-year old Cement field of Caddo County. The Ohio Oil Co. and Ramsey Petroleum Co. No. 6 Lackey, SE SE NW Section 11-5n-9w, on the east side of the field, flowed 1,797 bbls. of 34.7-gravity oil in four hours and was estimated good for 10,000 bbls. daily. It had Rowe sand at 3,316 feet, total depth 3,366 feet, with 7-inch casing set at 3,362 feet. When plug was drilled, it started flowing about 200 bbls. of oil an hour, the flow increasing to the record amount after casing was perforated at a higher level.

The new producing area in Sections 17 and 20-7-6, Seminole County, has been tentatively named the Newsome pool, pending formal naming by the Nomenclature Committee. It also is called the Edgeman pool. Smith Brothers No. 1 Smith, NW NE NE Section 20-7-6, had Wilcox sand at 4,330 feet and oil rose 3,000 feet in the hole in one hour. It was shut in for tankage and connections. The other producer in the area is Newsome and others No. 1 Edgeman, SE cor. Section 17-7-6, a recent completion. Three other tests have been started in the area.

Wildcat Reports

Wagner-Stegner No. 1 McGee, NE NE SE Section 25-8-22w, opened a new gas-producing area in Beckham County. It found gas sand at 1,014-46 feet, total depth, and was completed for 5,500,000 feet of gas, with 400 pounds rock pressure. Production was from Wichita-Albany formation.

Indian Territory Illuminating Oil Co. No. 1 Kichin, C SE SE Section 17-22-5w, wildcat in Garfield County, found first Wilcox sand at 6,878 feet, second Wilcox sand 6,934 feet, salt water was indicated on a Schlumberger test, and it was dry and abandoned at 6,950 feet, total depth.

First National Oil Co. No. 1 Butterly, C NE NE SE Section 22-1n-1e, Garvin County wildcat, had showings of oil at 2,340 feet, 2,560 feet, 2,643 feet, 2,654 feet, show of gas at 2,705-30 feet, where it tested 3,218,000 feet of gas on open flow, had oil showing at 2,952 feet, show of oil and gas at 3,000-3,016 feet, but was dry and abandoned at 3,205 feet, total depth in shale.

Another southern Oklahoma deep test was given up as a failure at Sinclair Prairie Oil & Gas Co. No. 1 Felts, NE cor. Section 35-6s-2w, Love County. Several shows of oil and gas were reported at various levels, but it was dry and abandoned at 8,185 feet, total depth in shale. Work was started at this wildcat in September, 1937.

Crawford and others No. 1 Kemray, SW SW NW Section 36-5n-18w, wildcat in Kiowa County, had spudded. It was scheduled as a 1,750-foot test.

Ed Parsons and others No. 1 McKinney, SE SE SW Section 30-3n-8w, wildcat in the southwestern corner of Grady County, was a derrick. It was scheduled as a 6,500-foot test.

Pottawatomie County

Four producers were completed in the St. Louis field, Pottawatomie County. Arkhoma Oil Corp. No. 2 Beam, SE SW NW Section 36-7-4, had dolomite pay at 4,175-4,210 feet, total depth, was acidized and swabbed 762 bbls. of 38-gravity oil net in 24 hours. On later tests it pumped a considerable amount of water with the oil.

Alma Oil Co. No. 4 Curley, NE SW NW Section 33-7-5, was acidized and pumped 600 bbls. of oil and 60 bbls. of water in 24 hours. It found dolomite pay at 4,049-82 feet, total depth.

Indian Territory Illuminating Oil Co. No. 3 Weems, SW cor. Section 21-7-5, found Calvin sand pay at 2,823-31 feet, total depth, and pumped and flowed 61 bbls. of oil in 24 hours, initially

Magnolia Petroleum Co. No. 2 Jones C, SE SW NE Section 18-7-4, had Hunton lime pay at 3,930-4,000 feet, total depth, was acidized and pumped 137 bbls. of oil in 14 hours, then pumped 40 bbls. of 38.5-gravity oil in six hours and pumped off.

Same company's No. 2 Tull-Fyke A, SE SE NW Section 20-7-5, was dry and abandoned at 4,210 feet, total depth.

Stout & Stewart No. 1 Welden, SW NW NW Section 20-6-4, an old well in the Asher area, had plugged back from 3,733 feet and ripped casing, but lost tools in the hole when pipe collapsed and was abandoned.

Magnolia Petroleum Co. No. 3 Lynn, SE NE NE Section 21-7-4, an old St. Louis well, had a hole full of water and was abandoned after deepening from 3,217 feet to 3,232 feet.

New operations in Pottawatomie County Denver Producing & Refining Co. No. 2 Grove, SW SE NE Section 5-6-5, drilling below 1,645 feet; F. W. Cooper Drilling Co. No 1 Neighbors, NW SW SW Section 29-7-5, spudded; J E. Trigg No. 4 Canfield, SE NW SW Section 33-7-5, rigging up rotary; Morgan & Flynn No. 1-A School Land, NE NE SW Section 16-8-5, location.

Pontotoc County

Arrowwood and others No. 1-A Julius, SW NW NE Section 6-4-7, East Ada pool, Pontotoc County, had Senora sand pay at 1,147-65 feet, total depth 1,180 feet, and pumped 10 bbls. of 35-gravity oil and 6 bbls. of water daily.

Oil, Inc., No. 1 Braly, NW SW NE Section 21-5-5, Bebee pool, found Viola lime pay at 2,624-43 feet, total depth 2,646 feet, and pumped 35 bbls. of oil and 15 bbls. of water in 24 hours. Gravity of the oil was 37 degrees.

Minton & Osborn No. 1 Powell, NE SE NE Section 35-5-7, Pontotoc County sector of the Allen field, pumped 60 bbls. of oil in 24 hours from Gilcrease sand pay at 2,318-41 feet, total depth.

Same operators' No. 2 Powell, SE SE NE Section 35-5-7, was a location. Magnolia Petroleum Co. No. 1 Chandler Estate, SE NE NE Section 35-5-7, was a location.

Okfuskee County

Mid-Continent Petroleum Corp. No. 4 Irelan, NE NW SW Section 10-13-10, Okfuskee pool, in Okfuskee County, topped Wilcox sand at 3,436 feet, was bottomed at 3,455 feet, was shot and swabbed 160 bbls. of accumulated oil in 24 hours, later pumping at the rate of 90 bbls. daily.

Commercial Drilling Co. No. 8 Comey, C S half NE NE Section 26-12-11, Sheldon area, topped Wilcox sand at 3,555 feet, had a hole full of water and was abandoned at 3,605 feet, total depth.

O. H. Grimes No. 1 Harjo, SW SE SE Section 26-11-9, Okemah area, was dry and abandoned at 1,509 feet, total depth.

C. W. Titus No. 1 Replogle, NW SW SE Section 23-11-8, was moving in machine. O. H. Grimes No. 2 Harjo, SW SE SE Section 26-11-9, was drilling below 140 feet.

Seminole County

Barbara Oil Co. No. 6 Chapman, SW SW SE Section 25-5-7, Seminole County side of the Allen field, pumped 55 bbls. of oil, with 2,000,000 feet of gas, in 24 hours from sand pay at 2,258-68 feet, total depth.

Vierson Oil & Gas Co. No. 1 Salma, NW SW NW Section 25-5-7, had Gilcrease pay at 2,437-42 feet, total depth 2,471 feet, plugged back to 2,450 feet, was shot, swabbed 85 bbls. of oil in 24 hours and pumped 50 bbls. of oil in 24 hours.

Arkansas Fuel Co. No. 3 Reed A, SE NW NE Section 18-5-8, was rigging up rotary.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending October 8, and for the preceding week, was as follows:

	Barrels	
	Oct. 8	Oct. 1
Allen	6,725	6,850
Billings	4,800	4,750
Burbank	7,900	4,800
South Burbank	10,375	10,525
Balance Osage	18,500	18,850
Blackwell district	4,275	4,500
Bristow-Slick	6,700	6,725
Chandler	2,000	1,975
Crescent	3,950	3,925
Cromwell	3,450	3,425
Cushing-Shamrock	10,750	10,600
Duncan district	4,250	4,525
Edmond	4,850	5,000
Fish	3,225	3,450
Fitts	36,525	37,725
Jesse	3,000	2,025
Graham-Fox	4,550	4,750
Gray	925	900
Healdton	8,775	8,975
Hewitt	3,900	4,150
Keokuk	4,175	4,075
Konawa	1,325	1,375
Lucien	8,350	8,450
Moore	4,650	4,575
Oklahoma City	99,300	95,175
Olympic	4,725	4,725
Ramsey	2,150	2,100
Sasakwa	1,400	1,475
Sholem-Alechem	2,450	2,400
Seminole district:		
Bowlegs	9,225	9,500
Carr City	3,325	3,725
Dora	4,950	5,225
Earlsboro	5,175	5,350
South Earlsboro	450	500
East Earlsboro	4,875	5,250
Little River	7,250	7,625
East Little River	875	900
Maud	650	725
Mission	1,475	1,650
Seminole	8,525	8,725
East Seminole	1,650	1,775
Searight	2,925	2,950
Total Seminole	51,350	53,900
St. Louis-Pearson	23,500	24,225
Tatums	2,275	2,350
Tonkawa-Garber-Thomas	4,250	4,600
Wewoka	2,150	2,175
Yale-Jennings	3,925	3,925
Other pools	85,000	90,100
Total Oklahoma	450,400	454,050

Okmulgee County

J. P. Brady No. 3-B Parks, C SE NE Section 9-15-11, Pollyanna area, Okmulgee County, had Bartlesville sand at 1,877-84 feet, total depth, was shot and pumped 20 bbls. of oil in 24 hours.

Sheridan Oil Co. No. 2 Thompson, SE SW SE Section 5-15-11, had a hole full of water and was abandoned at 2,099 feet, total depth.

Bryan Petroleum Co. No. 2 Steil, SE cor. Section 5-15-11, was dry and abandoned at 2,242 feet, total depth.

In the Morris district Link Oil Co. No. 16 McCrary, NE SW NE Section 28-13-14, found sand at 1,569-93 feet, total depth, was shot and pumped 5 bbls. of oil daily.

R. B. Pugh No. 15-A Hulsey, NE NW NW Section 23-14-14, an old well in the Bald Hill area, pumped 3 bbls. of oil daily after deepening from 612 feet to Booch sand at 1,037-46 feet, total depth.

Ed Smith No. 5 Keaton, NE SW SE NE Section 1-14-12, Hamilton Switch field, was dry and abandoned at 2,215 feet, total depth.

Jordan and others No. 1-B Simms, CNL SW SW Section 33-16-11, was shot and pumped 3 bbls. of oil daily from Bartlesville sand pay at 1,938-2,106 feet, total depth.

Commercial Drilling Co. No. 2 Snead, SW SE SE Section 26-15-12, was drilling below 950 feet. Edwards No. 3-B Tabor, C NW NE Section 33-15-14, was a location.

Osage County

Harland Oil Co. No. 23 Osage, NE Section 26-24-11,

It's a good idea —"WASN'T" IT?

THE tense can change from present to past almost as fast as that when a better way comes along. Even if it rattled, your old mechanically joined auto chassis was once entirely satisfactory. They *all* rattled. But then the welded chassis came along and the "rattling good" chassis became entirely UNsatisfactory.

The mechanically joined pipe line stands at the place the mechanically joined chassis and many other products once stood. Yesterday the screwed or flanged joint was all right simply because there was no better way. Today the welding fittings and welding methods have reached the point where industry is saying in effect: "The mechanical joint is a good idea, WASN'T it?"

WeldELLS are one of the best reasons for this swift change. They alone combine seamless construction, full pipe thickness at all points, tangents which remove the weld from the curved section, and machine tool bevelled welding surfaces which permit sound penetrating welds. Welded the WeldELL way, a pipe line has the best possible flow characteristics; the greatest strength; the lowest maintenance cost; the finest appearance.

The Taylor Forge line contains the largest range of sizes, thicknesses and types of welding fittings made. Large stocks in all important industrial centers.

TAYLOR FORGE & PIPE WORKS

General Offices and Works: P. O. Box 485, Chicago, Ill. New York Office: 50 Church St.

TAYLOR FORGE

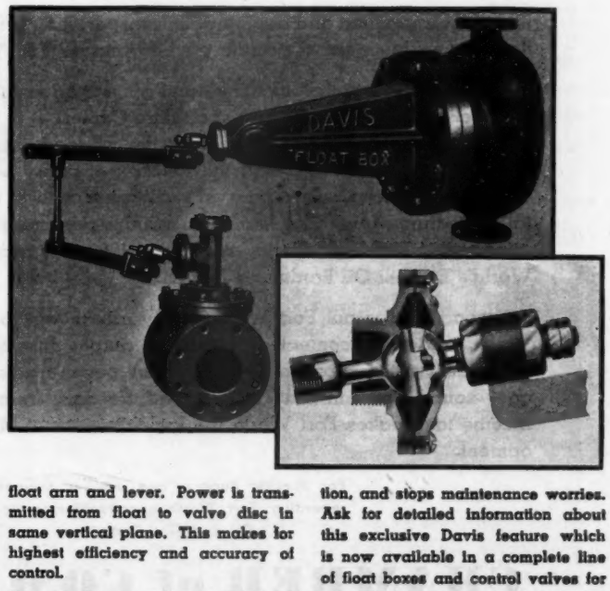
***WeldELLS**

Seamless Pipe Fittings for Welding

★ Trade Mark Registered

STOP THE LEAKS!

with "PACKLESS" Float Boxes



IF you want to end the nuisance . . . expense . . . and possible danger of stuffing boxes that leak, standardize on Davis' new line of float boxes and lever operated valves featuring the patented DAVIS "DIA-BALL" PACKLESS HEADS!

The unit pictured above consists of a No. 161 D Float Box actuating a No. 66 B Packless Balanced Valve. This inset shows a cross-section of the "DIA-BALL" construction used in both the float box and the control valve.

Note that there is no offset between float arm and lever. Power is transmitted from float to valve disc in same vertical plane. This makes for highest efficiency and accuracy of control.

The diaphragm sealed ball-joint eliminates leakage, minimizes friction, and stops maintenance worries. Ask for detailed information about this exclusive Davis feature which is now available in a complete line of float boxes and control valves for oil refinery and natural gasoline plant service.

DAVIS REGULATOR COMPANY

2543 SOUTH WASHTENAW AVE., CHICAGO, ILL.

Fort Worth's Magic Circle has a radius of 400 miles, and contains the World's Largest Oil Producing Area.

Any Part of Area Can be Reached Over Night by Train . . . In a short day's Drive . . . Or a few hours by Plane

If rapid, economical and dependable transportation is important in the operation of your business, then note the advantages Fort Worth offers you.

Because of its natural location, and its superior facilities, Fort Worth is definitely the Southwest's Transportation Center. It is the only Southwestern city located on the main lines of all the railroads serving both Texas and Oklahoma—as well as being the junction of many national highways and having an air terminal with travel facilities second to none. These transportation features give Fort Worth a definite advantage in serving the area lying within its Magic Circle—a circle of 400 miles radius which contains the World's Largest Oil Producing Region.

Transportation is not Fort Worth's only advantage, but it is a major factor which, added to contented labor—an ample supply of office space—an abundant water supply—low industrial power rates—economical natural gas—sound "oil minded" banks, and freedom from sales tax and State income tax, makes Fort Worth the logical center of Mid-Continent oil development.

For Specific Surveys and detailed information regarding Fort Worth opportunities, write the Oil and Gas Committee

CHAMBER of COMMERCE

FORT WORTH

Heart of the Mid-Continent Area

Osage County, an old well originally bottomed at 1,703 feet, was deepened to 1,728 feet, total depth, and pumped 3 bbls. of oil and 5 bbls. of water, recompleted.

New work in Osage County: Barnsdall Oil Co. No. 11 Osage, C SE NW Section 21-23-11, drilling below 1,931 feet; Oklahoma Natural Gas Co. No. 1965 Osage, C S half SW SE Section 32-20-12, location; Gray & Tolson No. 12 Osage, SE NW SW Section 27-21-9, location; C. B. Houston No. 6 Osage, SE SW SW Section 28-23-9, location; Sinclair Prairie Oil Co. No. 9 Osage, NW NE NW Section 26-24-10, location; Peters Petroleum Corp. and Sinclair Prairie Oil Co. No. 2 Osage, NE SW NW NE Section 24-24-7, location; Sinclair Prairie Oil Co. No. 4 Osage, NW NE SW Section 22-25-6, location.

(Continued on Page 100)

California Fields

(Continued from Page 91)

Los Angeles Basin

Union Oil Co., in the Rosecrans field of Los Angeles Basin, completed No. 25 Rosecrans, flowing 1,720 bbls. of clean 31.5-gravity oil from the deep Miocene O'Dea zone with bottom of the hole at 7,588 feet.

In the Dominguez field, Union cleaned out and recompleted No. 61 Callender flowing 351 bbls. of clean 29.5-gravity oil per day on a compressor from 7,260 feet. In the Montebello field, St. Helens Petroleum Co. recompleted No. 28 Monterey flowing 242 bbls. of 35.9-gravity oil per day from the sixth zone of Miocene age after the hole had been redrilled and deepened from the fifth zone.

Wildcat Drilling

Exploration work in potentially productive areas in California continues to show a consistent increase and a further gain is anticipated. Seaboard Oil Co. has just leased 52,316 acres of potential oil land in Fresno County and will immediately subject it to a geophysical survey. The acreage embraced in this lease is located on Monocline Ridge about 6 miles northwest of Coalinga and is included in Townships 15, 16, 17 and 18 south and Range 12, 13 and 14 west of the Mount Diablo base and meridian. A few months ago Standard Oil Co. leased the 15,000-acre Hacienda Rancho, 12 miles southwest of Kettleman Hills, and south of the Tulare Lake basin district in Kings County, and plans call for a thorough geophysical survey. The property in question which was leased from J. B. Van Nuys of Los Angeles was at one time held under lease by Shell Oil Co., Sunset Oil Co., Richfield Oil Corp. and others but was quitclaimed after superficial work. In addition to wildcats actually under way prospectors are still acquiring leases in several parts of the state. Some of these will be given immediate tests while others will be delayed, as dome leases are for five years' duration, subject to the payment of an annual rental. In the untested area between the Playa Del Rey and El Segundo fields in Los Angeles Basin Union Oil Co., Standard Oil Co., Shell Oil Co., Tide Water Associated Oil Co. and the Texas Co. purchased jointly the acreage in fee for $900,000 and will not do any drilling for some time unless present intentions are changed unexpectedly. This is the first large transaction of its kind in the state and the joint purchase was made because the fee owner refused to lease.

Fresno County Wildcat Acreage

Union Oil Co. recently paid a cash bonus of $10,000 for a lease on 160 acres of about 5 miles northwest of the East Coalinga field and north of the Gatchell lease on which Petroleum Securities Co. discovered a new field of importance last June. The property taken by Union is the southeast quarter of Section 20-19-16, and is owned in fee by John W. Dodge and Lloyd Cobb. Lease obligations stipulate that drilling operations must be started within five years after date and provides for an annual rental of $10 per acre if no work is undertaken within three years and a rental of $15 per acre annually for the fourth and fifth year. In addition to this lease, Union Oil Oo. has several hundred additional acres unier lease in the immediate locality and contemplated early work. Tide Water Associated Oil Co. stepped into the picture before Union had completed its leasing activities and secured a lease from the Fleishhacker interests that provided for immediate drilling. As a result of this lease obligation, Tide Water Associated Oil Co. finds itself in the position of having to test out acreage adjoining leases held by Union Oil Co.

Rocky Mountain Area

By
T. R. INGRAM

New Pool in Prospect Five Miles West of Eunice Field

DENVER, Colo., Oct. 10.—Colorado had one completion, the Interstate Oil & Refining Co. No. 1 Hinman, Grand County, which was dry and abandoned.

The Ohio Oil Co.-California Co. No. 3-A Kyle, a test to the granite in Big Medicine Bow, Wyoming, reached that horizon at 7,844 feet and will plug back and recomplete in the Sundance. The Sinclair-Wyoming Oil Co. No. 3 Mahoney, Carbon County, a Tensleep test, flowed and swabbed 635 bbls. of fluid upon deepening 76 feet. The Ohio Oil Co. No. 2-A Baker, Oil Springs district, was abandoned instead of drilling a directional well, and a new hole is being started. The Frontier Petroleum Co. No. 1 Government, a test to the Frontier in the Dry Piney district, had a gas blowout in that horizon. The Texas Co. completed a small well at La Barge.

Montana had one completion, Texas Co. No. 2 Government, in Cut Bank, for 157 bbls., and three new operations, two of which were in Kevin-Sunburst. The Zodiac Oil Co. is starting another test in the Pendroy district in Teton County.

The Continental-Hughes test on the Nutrias dome, Arriba County, New Mexico, was dry and abandoned at 1,920 feet. The Petroleum Production Corp., which recently acquired the Hospah pool in McKinley County, completed its first well for 150 bbls.

NEW MEXICO

A new pool in Lea County, southeastern New Mexico, apparently is in the making at Francis C. Wilson No. 1 State, C SW NE Section 7-21-35, wildcat 5 miles west of the Eunice field. It had oil and gas showings at 3,750-54 feet and at 3,776 feet 200 feet of oil rose in the hole. It was bailed dry there, but more oil was found at 3,799-3,802 feet and it rose 1,600 feet in the hole in 24 hours. Ten hours later it had risen 1,900 feet higher and made a small head flow. After the crew had swabbed to bottom, oil rose 2,900 feet in 11 hours. It was to be shot preparatory to testing.

Possibility of another oil pay zone for the Vacuum field was indicated by showings at Magnolia Petroleum Co. No. 1-M State, C NE NW Section 34-17-35. It topped Yates sand at 2,920 feet and had gas showing at 3,068-75 feet. On a 45-minute drill stem test at 3,046-3,181 feet, nine joints or 270 feet of oil and mud were recovered, with 100,000 feet of gas daily. Drilling was stopped at 3,187 feet and tubing was run to 3,163 feet, the well then making a flow and dying. Tubing was pulled, it was shot and operators were cleaning out. This is the first time oil has been found in the Yates zone at Vacuum, other wells in the field producing from lime at around 4,400 to 4,700 feet.

Completions of the week in southeastern New Mexico included six new wells in Lea County and two wells in Eddy County. Two old wells in Lea County were reconditioned and recompleted. The completions were:

Texas Co. No. 3-Q State, C NW SE Section 25-17e-34e, Lea County, was completed at total depth of 4,725 feet, top of pay 4,615 feet. Initial flow was 168 bbls. of oil per day on gas lift through open 2-inch tubing.

The Texas Co. No. 8-O State, C SW SW Section 36-17s-34e, total depth 4,710 feet, topped pay at 4,540 feet and flowed 192 bbls. of oil in four hours through tubing at 4,654 feet.

Same company's No. 7-O State, C SE SE Section 36-17s-34e, total depth 4,710 feet, topped pay at 4,500 feet. Initial flow was 144 bbls. of oil in three hours through open tubing at 4,700 feet.

Magnolia Petroleum Co. No. 2-L State, C SW SW Section 21-17s-35e, total depth at 4,665 feet, topped pay at 4,360 feet and had an initial flow of 70 bbls. of oil through three-eighths inch choke on 2½-inch tubing at 4,663 feet.

Ohio Oil Co. No. 1 State-Warn, C NW NW Section 6-18s-35e, total depth 4,675 feet, topped pay at 4,340 feet and flowed 50 bbls. of oil per hour through three-fourths inch choke on 2½-inch tubing at 4,645 feet. Gas gauged 1,000,000 feet.

Gulf Oil Corp. No. 1-B White, C SE SE Section 35-20s-36e, (O.W.D.D.) had an old total depth of 3,895 feet, plugged back to 3,857 feet and flowed 25 bbls. fluid per day, 3 per cent water. Gas flow was 650,000 feet.

Schermerhorn Oil Co. No. 1 Woolworth, C NW NE Section 28-24e-37, (O.W.D.D.), had an old total depth of 3,477 feet, was drilled out to 3,543 feet and flowed 350 bbls. of oil per day with 3,000,000 feet of gas.

Anderson & Prichard No. 2 Stuart, SW SW NW Section 14-25s-37e, had total depth in lime and sand at 3,430 feet, topped pay at 3,336 feet and flowed 19 bbls. of oil per hour.

Harry Leonard No. 1 Texas, NW NW NE Section 36-16s-31e, Eddy County, was completed at total depth of 4,009 feet, topped pay at 3,822 feet, and had an initial flow of 75 bbls. per day through open casing, with 250,000 feet of gas.

F. G. Keyes No. 2 State, C SE NE Section 9-17s-28e, Eddy County, was completed at total depth of 1,734 feet, with pay at 1,713-24 feet. Initial production was 66 bbls. of oil per day through open casing, with 1,000,000 feet of gas. Gravity of the oil was 36 degrees.

Lea County

Amerada Pet. Co. No. 1 Johnson, C NW SW Sec. 27-24-37. M.I. rot.
American Liberty No. 1 Carson, C SW SE Sec. 28-21-37. Drlg. 293 ft.
Anderson & Prichard No. 3 Wells, C NE NW Sec. 5-25-37. T.D. 3,567 ft.; top pay 3,450 ft.; rng. tbg.
Cities Service No. 1-K State, C SW NE Sec. 27-17-35. W.O.C. 4,190 ft.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. Loc.
Continental Oil Co. No. 7 Reed B-23, NE NW SE Sec. 23-20-36. Drlg. 2,820 ft.
Continental Oil Co. No. 1 State 1-7, NE NW NE Sec. 7-17-34. T.D. 4,895 ft.; drlg. out bridge at 3,300 ft.
Continental Oil Co. No. 2 State H-35, C NE NE Sec. 35-17-34. T.D. 1,200 ft.; cmtg.
Culbertson & Irwin No. 2 Dabbs, NE NW NW Sec. 35-25-37. Drlg. 800 ft.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; W.O.C.
Emperor Oil Co. No. 1 Humble-State, C SE SW Sec. 36-20-35. Drlg. 3,550 ft.
Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. T.D. 3,715 ft.; P.B. 3,686 ft.; M.I. cable tools.
Gulf Oil Corp. No. 3-D Arnott-Ramsey, C NE NE Sec. 33-21-36. W.O.C. 2,580 ft.
Gulf Oil Corp. No. 1 Holt, C SW SE Sec. 16-24-37. Drlg. 900 ft.
Gulf Oil Corp. No. 6 McCormack, C NW SE Sec. 32-21-37. T.D. 3,629 ft.; fsg.
Helmerich & Payne and Continental Oil Co. No. 1-G-36 State, C NW SW Sec. 36-17-35. T.D. 4,950 ft.; tst. 35 B.O.P.D. at 4,920 ft.; D.D. to 4,950 ft.; swb. 30 to 40 B.O.P.D.; to shoot.
Humble O. & R. Co. No. 3 Greenwood, C SW SW Sec. 9-22-37. R.U.R.
Humble O. & R. Co. No. 1-J State, C SW SW Sec. 19-17-35. T.D. 4,725 ft.; swb. 5 B.O.P.H.
Italo Pet. Corp. No. 1-B-22 Carlson, SW SE SE Sec. 22-25-37. Drlg. 455 ft.
Italo Pet. Corp. No. 2-B-22 Carlson, NE SW SE Sec. 22-25-37. W.O.C. 180 ft.
Magnolia Pet. Co. No. 2 Hardy, NW NW NW Sec. 29-21-37. W.O.C. 3,627 ft.
Magnolia Pet. Co. No. 3 Hardy, C NE NW Sec. 29-21-37. Drlg.
Magnolia Pet. Co. No. 1-M State, C NE NW Sec. 34-17-35. T.D. 3,187 ft.; 279 ft. O.I.H. in 45 min.
Magnolia Pet. Co. No. 1-N State, C SW NW Sec. 19-17-35. C.&P.
Magnolia Pet. Co. No. 13 State-Bridges, C SW NW Sec. 25-17-34. T.D. 4,763 ft.; C.O. at 4,600 ft.
Magnolia Pet. Co. No. 14 State-Bridges, C SW NE Sec. 25-17-34. T.D. 4,720 ft.; C.O. at 4,555 ft.; swb. and F. 100 B.O.P.D. while C.O.
Magnolia Pet. Co. No. 16 State-Bridges, C NW NE Sec. 25-17-34. Drlg. 4,125 ft.
Magnolia Pet. Co. No. 17 State-Bridges, C NE NE Sec. 25-17-34. Drlg. 3,690 ft.
Maljamar O. & G. Co. No. 10 Baish, C SW NW Sec. 22-17-32. T.D. 4,110 ft.; F. est. 15 B.O.P.D.
Maljamar O. & G. Co. No. 12 Baish, C NE NW Sec. 22-17-32. Drlg. 2,541 ft.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. Drlg. 4,025 ft.; 1,600 ft. F.I.H.
Jas. A. Mascho No. 2 Cloyd, C SW SW Sec. 20-22-33. T.D. 5,038 ft.; S.D.O.
J. M. Murray, Trustee, No. 1 Fanning, SE SW NW Sec. 33-23-37. Drlg. 580 ft.
John Menke No. 1 Alexander, C NW NW Sec. 5-21-37. T.D. 3,791 ft.; C.O. at 3,785 ft.; F. 93 B.O. in 24 hrs.
Ohio Oil Co. No. 1 State-Shugart, C NE SE Sec. 34-17-34. C.&P.
Ohio Oil Co. No. 2 Turner, SW NW SE Sec. 29-21-37. O.W.D.D.; O.T.D. 3,800 ft.; to deepen.
Ohio Oil Co. No. 2 State-Warn, C NE NW Sec. 6-18-35. W.O.C. 505 ft.
Ohio Oil Co. No. 1 State-Bridges, C NE NE Sec. 20-17-34. T.D. 4,755 ft.; top pay 4,702 ft.; F. 202 B.O. in 24 hrs.
Ohio Oil Co. No. 1 Wills, C NE NW Sec. 35-26-37. Drlg. 2,780 ft.
Olean Pet. Co. No. 1 Boyd, C NW SW Sec. 23-22-37. T.D. 3,694 ft.; C.O. on bottom.
Olean Pet. Co. No. 1 Brunson, SW SE SE Sec. 4-22-37. Drlg. 1,188 ft.
Olean Pet. Co. No. 1 Ferrell, C NE SE Sec. 22-22-37. T.D. 3,684 ft.; F. 32 B.O. in 12 hrs.
Parker Drlg. Co. No. 1-A State, C SW SW Sec. 21-22-37. T.D. 3,665 ft.; F. 55 B.O.P.D. from 3,490-3,609 ft.
Lem Peters No. 1 Coll. NW SW SW Sec. 26-22-37. T.D. 3,685 ft.; F. into pits, no gauge.
Lem Peters No. 4 L. J. May, SW SE NE Sec. 27-22-37. Drlg. 3,640 ft.; 2,000 ft. O.I.H.
Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. T.D. 1,145 ft.; R.U. mch.
Phillips Pet. Co. No. 2 Hale, C NE SW Sec. 35-17-34. Loc.
Phillips Pet. Co. No. 1 Mabel, C SW NW Sec. 35-17-34. Drlg.
Phillips Pet. Co. No. 3 Santa Fe, C SW NW Sec. 5-18-35. Drlg. 4,270 ft.
Phillips Pet. Co. No. 10 Santa Fe, C NE NW Sec. 24-17-34. Drlg. 3,535 ft.
Phillips Pet. Co. No. 11 Santa Fe, C NE SW Sec. 26-17-35. T. D. 4,035 ft.; S.D., repairs.
Schermerhorn Oil Co. No. 3 Woolworth, NW NW SE Sec. 28-24-37. M.I. mch.
Shasta Oil Co. No. 3 Woolworth, NE SE NW Sec. 28-24-37. Loc.
Shell Pet. Corp. No. 3 Grizzel, C SE SE Sec. 8-22-37. R.U.R.
Shell Pet. Corp. No. 4-A State, C NE NE Sec. 31-17-35. Drlg. 3,913 ft.
Shell Pet. Corp. No. 1-F State, C SW SW Sec. 29-17-35. Drlg. 4,404 ft.
Shell Pet. Corp. No. 1-H State, C NW SW Sec. 29-17-35. Drlg. 3,494 ft.
Shell Pet. Corp. No. 1-I State, C SW NW Sec. 29-17-35. Drlg. 4,022 ft.
Shell Pet. Corp. No. 1-N State, NE NE SE Sec. 24-21-35. W.O.C. 1,632 ft.
Shell Pet. Corp. No. 1-S State, C NE SE Sec. 21-17-35. T.D. 4,550 ft.; S.D., repairs.
Shell Pet. Corp. No. 1-U State, C NE NW Sec. 3-18-35. Drlg. 4,280 ft.
Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. Drlg. 3,275 ft.
Skelly Oil Co. No. 6 Baker, C SW NE Sec. 27-22-37. T.D. 3,660 ft.; C.O. at 3,655 ft.; no gauges; S.I.
Skelly Oil Co. No. 1-B King, C NE SW Sec. 33-22-37. Drlg. 3,531 ft.
Stanolind O. & G. Co. No. 4-C Hill, C SE NW Sec. 5-21-37. R.U.R.
Stanolind O. & G. Co. No. 5-B Langlie, C SE SE Sec. 9-25-37. Drlg. 3,676 ft.
Skelly Oil Co. No. 1 Simms, O.W.D.D., C NW SE Sec. 3-23-37. O.T.D. 3,594 ft.; T.D. 3,640 ft. F. 42 B.O. P.D.; shot and F. 106 B.O.P.D.; 3,000,000 ft. gas.
Stanolind O. & G. Co. No. 8 Terry, C NW SE Sec. 9-19-38. O.W.D.D.; O.T.D. 4,186 ft.; T.D. 4,200 ft.; P. 22 B.O. and 358 B.W.
Standard Oil Co. of Texas No. 1 State, C SW NW Sec. 32-17-35. T.D. 4,705 ft.; P.B. 4,649 ft.; M.I. pump.
Standard of Texas No. 1 State Lease No. 4, C NE SW Sec. 27-17-35 Drlg. 4,254 ft.
Standard Oil Co. of Texas No. 1 State, Lease 5, C NW NW Sec. 27-17-35. Drlg. 1,579 ft.
Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. Drlg. 650 ft.
Texas Co. No. 5 Fristoe, NW SE SE Sec. 3-25-37. Drlg. 3,463 ft.
Texas Co. No. 2 Fanning, C NW NE Sec. 4-26-37. Drlg. 3,554 ft.; S.O. and est. 500,000 ft. gas.
Texas Co. No. 1 Lodewick, C SW SE Sec. 34-18-33. W.O.C. 1,525 ft.
Texas Co. No 2-D State, C SW NW Sec 27-17-34. T.D. 4,860 ft.; tstg.
Texas Co. No. 1-J State, C SE NE Sec. 25-17-34. W.O.C. 1,607 ft.
Texas Co. No. 1-N State, C SW SW Sec. 30-17-35. T.D. 4,850 ft.; P.B. 4,689 ft.; bailed dry and S.S.O.
Texas Co. No. 2-N State, C NW SW Sec. 30-17-35. Drlg. 2,300 ft.
Texas Co. No. 9-O State, C SE SW Sec. 36-17-34. Drlg. 1,060 ft.
Texas Co. No. 1-U State, C NE NE Sec. 2-18-34. Loc.
Texas Co. No. 1-V State, C NE NW Sec. 34-17-34. Loc.
Texas Pacific C. & O. Co. No. 6-A State, SW SE NW Sec. 21-23-26. T.D. 3,686 ft.; 1,500,000 ft. gas; P.B. to 3,676 ft.; tstg.
Twin Oil Co. No. 1 Hare, C SE SW Sec. 33-21-37. Drlg. 3,310 ft.
Twin Oil Co. No. 2 Hare, C NW SW Sec. 33-21-37. T.D. 1,205 ft.
Twin Oil Co. No. 1 Joyce-Pruitt, C SE SE Sec. 31-21-37. T.D. 3,771 ft.; pmp. 5 B.O.P.H.
Two States Oil Co. No. 3-B Cole, C SE NE Sec. 16-22-37. Drlg.
Weiner et al No. 2 Smith, NW SE NE Sec. 4-25-37. Drlg. 3,323 ft.
Sam Weiner No. 1 Woolworth, SE NE SW Sec. 33-24-37. W.O.C. 1,158 ft.

Westmount Oil Co. No. 1 Amerada, C NW NE Sec. 12-17-36. Spudding.
Francis C. Wilson No. 1 State, C SW NE Sec. 7-21-35. Drlg. 3,770 ft.; O.I.H.

Eddy County

Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Loc.
F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. T.D. 2,510 ft.; W.O.C.
George E. Bobb No. 1 Cannon, NE SW SE Sec. 4-19-30. C.&P.
Carper Drlg. Co. No. 1 Day, NE NE NE Sec. 3-19-21. T.D. 2,748 ft.; rng. csg.
Carper Drlg. Co. No. 3 Robinson, SW SW SE Sec. 25-16-31. T.D. 900 ft.; set csg.
B. Cockburn No. 1 State, C SW NE Sec. 16-18-31. T.D. 3,128 ft.; W.O.C.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. Drlg. 3,000 ft.; 400 ft. O.I.H.; est. 3,000,000 ft. gas.
D. & B. Oil Co. No. 3-A Berry, NW SW NW Sec. 21-17-30. Drlg. 3,100 ft.
Dominion O. & G. Co. No. 2 Johnson, C SE NE Sec. 35-16-31. T.D. 4,033 ft.; fsg. tools.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. Drlg. 3,312 ft.
English & Harmon No. 1 Dougherty, NE NE SW Sec. 3-17-27. T.D. 2,319 ft.; gauged 1,000,000 ft. gas; S.I.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. Drlg. 1,625 ft.
Paton Bros. No. 1 Erwin, C SW SW Sec. 9-18-31. Cellar.
Franklin Pet. Corp. No. 1 McIntyre, NW NE SE Sec. 20-17-30. Drlg. 3,060 ft.; swbg. 20 B.O.P.D.
Fullerton Oil Co. No. 1-A Johnson, C SE NW Sec. 35-16-31. T.D. 3,871 ft.; C.O. on bttm.; tstg.
Fullerton Oil Co. No. 2-A Johnson, C NW SE Sec. 35-16-31. Drlg. 3,689 ft.; S.O.
Fullerton Oil Co. No. 1-A Little, C NE NE Sec. 28-18-31. T.D. 3,597 ft.; 400 ft. O.I.H.; tstg.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. Drlg. 2,735 ft.
New Mexico Eastern Gas Co. No. 2 Stephens, SE SE NE Sec. 20-17-38. Drlg. 920 ft.; S.O. at 715-23 ft.
Premier Pet. Co. No. 1 Maddren-Beeson, NE SW SE Sec. 28-17-30. Drlg. 3,012 ft.
Premier Pet. Corp. No. 2-B Beeson, SW NW SW Sec. 27-17-30. Drlg. 405 ft.
Worth Drlg. Co. No. 1 Taylor, C SW SW Sec. 12-18-31. Drlg. 540 ft.
Martin & Lysette No. 1 Pardue & Guitar, SE SW NW Sec. 29-24-36. Drlg. 280 ft.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. Drlg. 960 ft.; 70 ft. O.I.H. in 8 hrs.
Yates-Dooley No. 1 Creek, C SW NE Sec. 35-18-30. Drlg. 3,383 ft.

Chaves County

E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. Drlg. 1,185 ft.
Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. Drlg. 368 ft.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. Sec. 15-15-30. T.D. 2,485 ft.; prep. to run csg.
J. & L. Drlg. Co. No. 2 Hurd, SW Sec. 11-11-26. T.D. 1,700 ft.; rng. csg.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 404 ft.; S.D. repairs.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27-7s-35e. Rng. csg. 288 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Drlg. below 350 ft.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. Drlg. 4,250 ft.

McKinley County

The Petroleum Production Corp., which recently acquired the Hospah dome properties of the Stanolind Oil & Gas Co., has completed its first well, No. 4 Santa Fe Railroad Land, NE NE NW Section 1-17n-9w at 1,610 feet. It is estimated at 150 bbls. per day. Production is from a sand in the Mesa Verde. Under former management the Dakota was tested and found water-bearing. The new well is on the apex of the structure and the pay was encountered at about the same depth as the other producing wells.

S. Dysart No. 3-A Govt., NE NW NE Sec. 14-14n-10w. Landed 12½-in. at 1,320 ft.; will cmt.

Rio Arriba County

The Continental Oil Co. No. 1 Esquibel, joint with L. M. Hughes, approximately in the SE Section 28-28n-4e, unsurveyed land, on the Nutrias structure, 40 miles south of the Gramps (Price) pool on the Colorado side, was plugged and abandoned in white water sand at 1,920 feet. The Muddy sand had no oil, gas or water. The Dakota, at around 1,817 feet, had water.

Oil City Pet. Co. No. 1 Azotea, SW SW NE Sec. 11-31n-2e. Drlg. 333 ft. and U.R. 6¼-in.; through Greenhorn; S.O.&G.

San Juan County

The San Wan Oil Co. (Culbertson & Irwin) No. 1 Government, Section 32-30n-11w, was dry and abandoned at 1,200 feet.

Continental Oil Co. No. 82 Rattlesnake, NE SW NW Sec. 1-29n-19w. M.I.M.; (first report).
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. below 250 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. S.D. 660 ft. for 10-in.

San Miguel County

Southwest Drlg., Inc., No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,450 ft.; prep. run 13⅜-in. for W.S.O.

Socorro County

Central New Mexico Oil Co. No. 1 Belen gr., SE NW Sec. 16-3n-1e. T.D. 2,965 ft.; C.O. below 12½-in. at 620 ft.

COLORADO

Adams County

J. B. Furstenberg et al No. 1 Hills, SE SE SE Sec. 27-3s-64w. T.D. 4,345 ft.; cmtd. to bttm.; rdy. to make new hole.

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; W.O. 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. T.D. 1,840 ft.; rng. 6¼-in. with bttm. hole pkr. to top Dakota.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. Drlg. below 6,100 ft.; prob. in Benton.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. Drlg. 2,250 ft.
R. E. Hawks No. 1 Orndoff, NE SW NE Sec. 3-19s-70w. S.D. 1,988 ft.; 400 ft. O.I.H.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE Sec. 36-7s-88w. T.D. 1,673 ft.; fsg. blr.

Grand County

The Interstate Oil & Refining Co. No. 1 Hinman, NE SE NW Section 11-2n-81w, Dirt Creek district, a wildcat started in 1933 and which recently found water in the Dakota at 3,920 feet, was deepened to 3,980 feet and plugged and abandoned. It had several shows of gas in upper shale beds.

Hueriano County

S. W. Pressey No. 2 Alamo, C SW SE Sec. 3-27s-68w. Drlg. 1,775 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 1,865 ft.; prep. to run 8¼-in.

Las Animas County

Hulme-Johnston-Allison No. 1 Azar, SE SE NW Sec. 27-34n-58w. Spd. Sept. 25 in 20-in. hole to go 4,000 ft.; spdg. 100 ft.; (cor. descrip.).

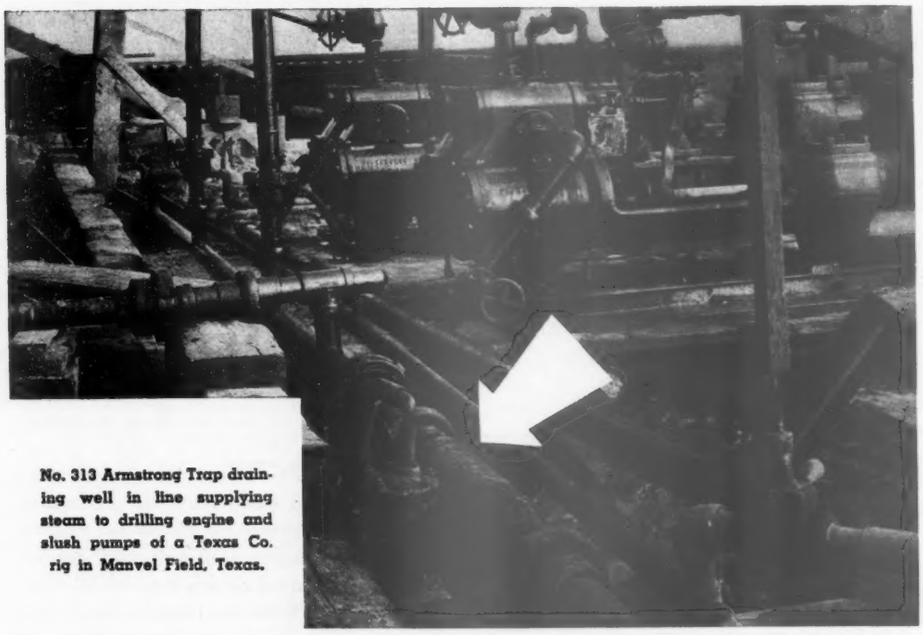
Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW Sec. 36-8s-91w. Drlg. 8,390 ft.

Moffat County

Stanolind O. & G. Co. No. 5-SD Parkinson, CNL NW

HOW to Make Drilling Engines Work Smoother and Faster



No. 313 Armstrong Trap draining well in line supplying steam to drilling engine and slush pumps of a Texas Co. rig in Manvel Field, Texas.

HERE'S how smart drillers are figuring in all parts of the country. To drill faster and deeper, you need a lot of power. You can get more power out of your present engines if you boost your boiler pressure. But if you push your boilers harder, you get more carryover and a slug of water will play hob with any engine.

Obviously, the solution is to intercept and remove slugs of water that carry over into the steam line. The way to intercept the water is to put a bull-plugged well in the line or else run the steam through a barrel type separator. The way to remove the water is with an Armstrong Forged Steel Trap. No. 313 is the size trap used by most drillers. It lists at $50.00 and is good for pressures up to 600 lbs. per sq. in. Write for location of stock near you and for discounts; or, we can ship immediately from factory. *Catalog on request.* ARMSTRONG MACHINE WORKS, 868 Maple St., Three Rivers, Mich.

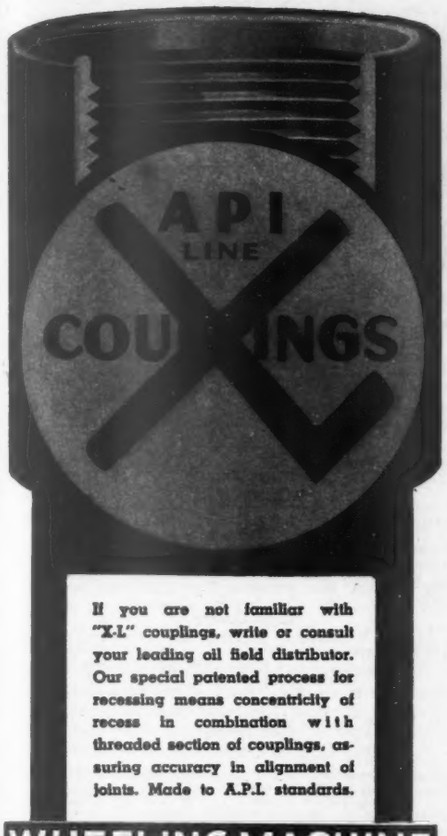
FREE

ARMSTRONG STEAM TRAP

ARMSTRONG TRAPS

Automatic Drainage for

REFINERIES · GAS PIPE LINES · DRILLING RIGS

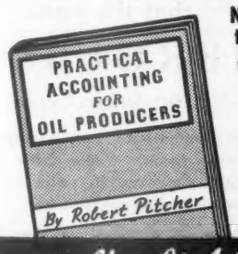


If you are not familiar with "X-L" couplings, write or consult your leading oil field distributor. Our special patented process for recessing means concentricity of recess in combination with threaded section of couplings, assuring accuracy in alignment of joints. Made to A.P.I. standards.

WHEELING MACHINE PRODUCTS COMPANY
WHEELING, W.VA.

Every Oil Man Needs This Book!

New **Reference Text Book covering all phases of oil producing accounting.**



Non-technical. Easy to understand . . .

Write for illustrated folder and our Free Examination offer . . .

MID-WEST Printing Co.
Publishing Div. 9
Box 766 Tulsa, Okla.

Use It A Week Before You Decide!

EQUIPPED TO HANDLE
BIG OVERHAULING
AND REPAIR JOBS

We Service Machinery . . . .

Rebore Engines and Compressor Cylinders for Gasoline and Gas Lift Plants.

Rewind and Rebuild Electric Motors and Generators on Electric Rigs

PREST
MACHINE WORKS CO.

Gives You The BEST

420 E. Grand Ph. 3-3478
OKLAHOMA CITY
Established 1909

SE Sec. 22-4n-92w. Cmtd. 4½-in. lnr. at 3,464 ft.; perf. and tstg.
Isenberg, Parker & Myers No. 1 Myers-State, NW SE NE Sec. 36-4n-103w. Bldg. rd. and M.I.M.
Mackinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. Drlg. 2,925 ft. in wet hole and lowering 8¼-in. through Dakota.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. Drlg. 735 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. T.D. 4,800 ft.; cmtg. caves.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. wh. L. 6,260 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,414 ft.; trying to regain lost cir.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. S.D. 1,670 ft. in Benton sh. for reprs.
C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. Drlg. 812 ft. in wet hole; through Dakota.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. S.D. 3,185 ft.; engine reprs.

Routt County

L. C. Craig and E. L. Moore No. 1-X Erwin, C SW NE Sec. 33-7n-85w. Rng. 12½-in. to set at 160 ft.
Mid-Colorado Pet. Co. No. 1 Omholt, NE NE SE Sec. 29-4n-87w. S.D. 2,140 ft.
Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NW Sec. 1-6n-86w. Rng. 8¼-in. to set at 1,389 ft.

WYOMING

Big Horn County

Yale Pet. Co. No. 2 Allen, Lot 52 (approx. SW NW SW Sec. 34-56n-97w). B.R. (cor. loc.).
Kirk Oil Co. No. 1 Frisby, C SW SE Sec. 11-49n-94w. M.I.C.T.; (cor. loc.).
A. L. Rankin No. 1 Karjajla-Rankin, C SW NW Sec. 10-54n-94w. Drlg. 617 ft.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. S.D. 832 (C.D.) ft. for csg.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,470 ft.; str. crooked hole.
John H. Thomas No. 1 Govt., SW SW SE Sec. 3-54n-94w. Rng. 8¼-in. to 607 ft. for W.S.O.

Carbon County

The Sinclair-Wyoming Oil Co. No. 3 Mahoney, C SE NW Section 34-26n-88w, which swabbed 15 bbls. in eight hours from the Tensleep at 4,408 feet, total depth, was deepened to 4,486 feet and swabbed and flowed 635 bbls. of fluid in 24 hours. It was then shut in for additional tankage. This is an old gas field which has been producing since 1919. A test on the same 40 was drilled several years ago by the old Producers & Refiners Corp. and made about 70 bbls. per day in the Tensleep. The new well had the top of the Tensleep at 4,295 feet.

The Ohio Oil Co. No. 2-A Baker, NW SW SW Section 2-23n-79w, a southeast offset to Cunningham No. 1 Union Pacific-Cronberg, the discovery on the Oil Springs dome, which made 55,000,000 feet initially in the Sundance at 2,315 feet, was plugged and abandoned at 2,717 feet. It showed for 5,500,000 feet a day in the upper part of the Sundance and then went into water. It was intended to plug back and drill a directional hole, but instead rig will be skidded 400 feet north and a new hole drilled.

C. D. Cunningham et al No. 1 Union Pacific-fee, NW SE NE Sec. 21-22n-78w. Drk.; W.O.R. tools.
C. D. Cunningham et al No. 1 Union Pacific-Wolfe, SE NW SW Sec. 7-23n-78w. Drlg. 650 ft.
Ohio Oil Co.-California Co. No. 5-A Kyle, C NW NE Sec. 26-21n-97w. Drlg. 1,097 ft.
Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE Sec. 26-21n-79w. T.D. 7,854 ft. in granite; will P.B. and recompl. in Sundance.
Producers Oil Co. No. 1 Lake Valley, 200 ft. C of NL Sec. 14-20n-88w. S.D. 1,916 ft.

Converse County

H. O. Emery and others No. 1 Roberts, NE NW SE Section 2-31n-70w, in the southwest end of the Shawnee shallow play, was plugged and abandoned at 390 feet. It had gas in the White River at 255 feet with water above and below. Rig has been skidded to the southwest for No. 2 Roberts.

H. O. Emery et al No. 2 Roberts, C SW SE Sec. 2-31n-70w. Skdg. rig from No. 1.
Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 640 ft. for csg.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. 1,953 ft.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. S.D. 483 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW Sec. 25-32n-69w. S.D. 670 ft. without tstg.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. Drlg. in lower Minnelusa at unreported depth.
Wyoming Southern Oil Co. No. 1 Winda, SW NE NW Sec. 6-31n-69w. Loc.
Blue Ridge Oil Co. No. 1. SW NW SE Sec. 29-32n-69w. Spd. and S.D.

Fremont County

The Yellowstone Oil Co., composed mostly of South Dakota people, has started a second test in the Shoshoni district. It is located 5 miles to the southeast of

Order a POMONA

and for Good Reasons!

● Ask any oil man who has used Pomona pumps . . . and he'll tell you that they're "tops" when it comes to *dependable, trouble-free* service. Their ability to meet the toughest, most difficult pumping conditions, and yet deliver satisfactory performance has made Pomona pumps the *first choice* of most oil men everywhere. That reputation alone is the best recommendation that can be offered for these quality-built pumps.

CHECK THESE PLUS VALUE FEATURES OFFERED BY POMONA PUMPS:

Unidrive Head ● Accessible Packing Gland ● Water Lubrication ● Standardized Column Pipe ● Open-Bottom Impeller.

● Pomona pumps are built to provide *dependable, low-cost* operation throughout a long service life. Every feature in their design, every part in their construction has been carefully engineered to assure *efficient, economical* performance. Pomona pumps are the result of 37 years of specialized experience in the manufacture of better pumping equipment. Pomona is a good name to remember when you buy your next pump!

POMONA PUMP CO.

Manufacturing Plants: Pomona, California St. Louis, Missouri

Branch Offices: New York, Chicago, Los Angeles, San Francisco

POMONA
TURBINE PUMPS

RYERSON Certified STEELS

IMMEDIATE STOCK SHIPMENT

Ryerson Certified Steels represent the highest quality obtainable in each class and type of material. Stocks include: alloy and tool steels, Allegheny stainless, structurals, bars, shapes, plates, sheets, shafting, tubing, reinforcing bars, bolts, nuts, welding rod, building products, metal working tools, etc.

Write for the Ryerson Stock List.

JOSEPH T. RYERSON & SON, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Cleveland, Detroit, Buffalo, Boston, Philadelphia, Jersey City. Offices at: Tulsa, Kansas City, Minneapolis.

Found

Valve cups that give dependable, economical operation year after year. Owners everywhere enthusiastic. Answer to the following names.

DARCOVA

(Orange Label) the standard for over thirty years under severe service at all depths.

DARVAL

(Blue Label) for service in wells to approximately 2000 feet in depth.

DARFLEX

(Green Label) the popular favorite for wells to 800 feet in depth.

Manufactured Only By

DARLING VALVE & MFG. CO.

Williamsport, Pa.

No. 1 Gabus, which the company drilled to 2,210 feet in 1932.

Yellowstone Oil Co. No. 1 Govt., SW NE NW Sec. 27-38n-93w. Drlg. 740 ft. with C.T.; (first report).
Lincoln O. & G. Co. No. 26 Tribal, NE SE SW Sec. 23-1s-1e. Spdg. 93 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. Drlg. 3,425 ft.; S.O. in Dakota not coml.; will go to Lakota.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. S.D. 1,150 ft.
Ben Stewart No. 1 Darnell, NE SE Sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. Drlg. 695 ft.

Hot Springs County

Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. Landed 12½-in. on bttm. at 1,266 ft.
J. W. Bailes No. 1 Govt., SE SW Sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 960 ft.

Natrona County

General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 4,820 ft.; D.S. in Shannon (top 4,625 ft.); showed 17 stds. drlg. fluid with small S.O.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW Sec. 35-40n-79w. T.D. 3,993 ft.; fsg. D.P.

Niobrara County

Ohio Oil Co. No. 6 Cash O.P.C.-2, NW NW NE Sec. 4-35n-65w. Spdg.
MacKinnie Oil & Drlg. Co. No. 4 Thompson, SE SW NE Sec. 7-35n-65w. Drlg. 2,870 ft.
Continental Oil Co. No. 1-B Dielman, SW SE NE Sec. 7-35n-65w. Drlg. 3,984 ft.; top Dakota 3,460 ft.
Continental Oil Co. No. 13 Tom Bell, SE NE SE Sec. 33-36n-65w. Drlg. 3,664 ft.
Ohio Oil Co. No. 11 Lamb Acct. 2, SW SE SE Sec. 5-35n-65w. Drlg. 5,070 ft.; top Converse zone 4,953 ft.
Fall River Royalty & Producers Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 345 ft.
Continental Oil Co. No. 7-B Schuricht, NW NW SE Sec. 6-35n-65w. Loc.
H. D. Moore et al No. 1 Bergrem, NW Sec. 23-35n-63w. S.D.O. 1,638 ft.; 1,400 ft. wtr.
Adams O. & G. Co. No. 1 Baker, NW NE SW Sec. 8-35n-65w. Cor. loc.
Continental Oil Co. No. 2-B Dielman, NE NW NE Sec. 8-35n-65w. Loc.

Park County

Stanolind O. & G. Co. No. 18 Elk-5, NW NE NW Sec. 30-58n-99w. Loc.
Ohio Oil Co. No. 1 Trans.-Ark., CSL SW SW Sec. 30-57n-98w. T.D. 6,929 ft.; will P.B. and recomp. in Frontier.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. Drlg. 8,300 ft.; will start cg. at 8,500 ft.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. Drlg. 300 ft.

Sublette County

Frontier Pet. Co. No. 1 Govt., SE SE SW Sec. 1-28-114w. T.D. 5,959 ft.; gas blowout.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd ranch, SE SE Sec. 31-31n-112w. S.D. 100 ft.
Wyo. Pet. Co. No. 1 Chas. Budd, C NE NE Sec. 10-29n-113w. Drlg. 900 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 80, NE NE NE Sec. 11-26n-90w. Drlg. 605 ft.; (first report).
Selegna Oil Co. No. 1 Union Pacific, SW SW Sec. 11-20n-104w. T.D. 5,230 ft.; shot stk. D.P. at 4,195 ft.; will set whpstk. at 3,500 ft. and drill by.
Sinclair-Wyoming Oil Co. No. 79 Lost Soldier, SE NE NE Sec. 10-26n-90w. Top Sundance sd. 1,891 ft.; cmtd. 5½-in. welded csg. at 1,888 ft.; R.U.C.T.

Uinta County

Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. Drlg. 1,567 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 300 ft.

Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. Drlg. 669 ft.

Weston County

Whedon et al No. 1, Sec. 21-46n-64w. Loc.; contr. let.
Taylor, Dodge & Pauley, C SW NW Sec. 17-46n-63w. M.I.M.
Osage Trust Co. No. 36, CSL NE Sec. 18-46n-63w. Drlg. below 300 ft.
F. R. Dilger, Tr., No. 16, SW SW NE Sec. 30-46n-63w. Drlg. below 700 ft.
Updike Bros. No. 1, NE SW NE Sec. 35-46n-64w. T.D. 2,027 ft.; fsg.
Hugh Updike No. 1, CEL NW SE Sec. 15-46n-64w. U.R. below 2,100 ft.
Federal Oil Co. No. 9, CNL SE SE Sec. 15-46n-64w. Ready to spud.
Gose Oil Synd. No. 1, NE NE NE Sec. 28-47n-63w. C.O. after landing 4¾-in. at 4,900 ft.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Borophy No. 1 George, SW SE NW Sec. 26-48n-64w. Drlg. 2,220 ft.

MONTANA

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Carbon County

Sha-Wha Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res.; will U.R. to bttm. and set csg.

Glacier County

One completion in Cut Bank was the Texas Co. No. 2 Government, NE NW NE Section 17-32n-5w, in the southern area of the field, which swabbed 157 bbls. the first 24 hours at 2,869 feet, total depth. It had the Sunburst sand at 2,795-2,815 feet with a show of oil at 2,812 feet, and the Cut Bank sand at 2,835-67 feet.

M. R. Wagner No. 1 Tribal-173, CEL SE SE Sec. 12-32n-6w. Drlg. 390 ft.
C. P. Castle No. 4 State, CNL SW SW Sec. 36-35n-6w. R.U.
Glacier Prod. Co. No. 1 State Unit, 800 ft. W of C Sec. 16-34n-5w. Drlg. 2,380 ft.
Texas Co. No. 1 Bonnett, NW SE SE Sec. 8-32n-5w. Drlg. 2,800 ft.
Glacier Prod. Co. No. 1 Math Unit, SW NE SW Sec. 36-35n-5w. Drlg. 2,440 ft.
Par Oil Co. No. 1 Tribal-170, SW NW SW Sec. 7-32n-5w. Cmtd. 7-in. 2,785 ft.; W.O.C.
Lawler No. 3 Hoerr-Harlan, NE SW SW Sec. 5-33n-5w. Drlg. in at 2,792 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.

Judith Basin County

Fletcher E. Hunt No. 1 Hoven, SE NE NW Sec. 30-14n-15e. Spdg.
Fletcher E. Hunt No. 3, NW SE NE Sec. 30-14n-15e. Res. at 1,825 ft.

Phillips County

Treasure State Pool O. & G. Co. No. 1 Govt., C SE SW Sec. 2-24n-23e. Drlg. 350 ft. in new hole.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW Sec. 3-27n-4w. T.D. 1,932 ft.; making W.S.O. to D.D.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. Spdg.
California Co. No. 1 Unit, NE SE SW Sec. 26-27n-9w. Drlg. dk. br. L. 1,840 ft.
Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. T.D. 2,525 ft.; prep. to D.D.

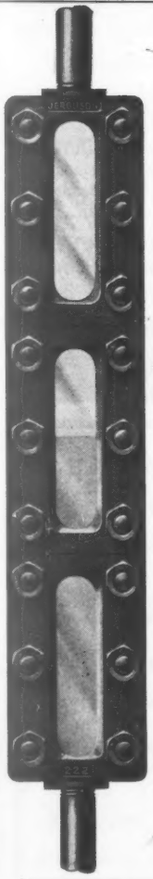
Toole County

Sorrell No. 1 Ward, C NE NW Sec. 1-34n-4w. Spdg.; (first report).
Big West Oil Co. No. 4 Engle, SW SW SW Sec. 1-35n-3w. Drlg. 300 ft.; (first report).
Aspen O. & R. Co. No. 1 Govt., C NE SE Sec. 25-36n-3w. Drlg. 750 ft.
C. D. Stocks No. 3 Haggerty, SE NW SW Sec. 13-35n-2w. S.D. 1,580 ft. until spring.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. Drlg. 2,700 ft.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. Drlg. 620 ft.
H. C. Morton No. 8 Morton, C SW NW Sec. 24-34-2w. Drlg. 1,436 ft.; contact 1,368 ft.; S.O.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Wyomont Oil Co. No. 1 Boetcher-Sayre, C NE SW Sec. 26-3s-24e. T.D. 979 ft.; 900 ft. O.I.H.; est 30 B.P.D.

JERGUSON



BE SURE

that the name

JERGUSON

is on your Gages

Jerguson Reflex and Transparent (thru vision) Gages have been noted for over 30 years for accuracy and dependability.

Reflex Gages indicate the liquid level, no matter what the color of the liquid. Ideal for tanks, towers, stills, etc., because the—

Empty space shows

WHITE

Liquid level appears

BLACK

Jerguson Transparent (thru vision) Gages for showing color and density of liquids, are also noted for their accuracy and dependence.

Jerguson Gages are best
By every real test

Catalog on request.

JERGUSON GAGE & VALVE CO.
85 FELLSWAY
SOMERVILLE, MASS.

Pools in Crane and Ector Counties Given Extensions

By
D. H. STORMONT

FORT WORTH, Tex., Oct. 10.—The Central and Southern basin area held most of the attention over the past week as production spreads were seen for the Tubbs pool of Crane County and the Moss area of Ector, accompanied by a possibility of commercial production for Reeves County.

Extending the oil production of the Tubbs area in Crane County a half-mile to the southeast, Humble Oil & Refining Co. No. 1-B Tubb, Section 19, Block 32, P.S.L. Survey, completed in June of this year as a 16,744,000-foot gas producer, has turned into a 140-bbl. oil producer. Bottomed at 4,430 feet, the gas had been used for the company's No. 20 Tubb, a north offset, and as the gas was used, a steady increase in oil production was noticed. The well is producing from 4,357-70 feet. The company's No. 20 Tubb, for which the gas was used, is now also indicating production as operators are deepening below 4,458 feet after having encountered oil saturation from 4,322-4,434 feet.

In eastern Crane County a three-quarter mile northwest outpost to the University pool opened earlier in the year on University of Texas lands, has been staked by the Standard Oil Co. of Texas. Test is No. 1-6 University, Section 6, Block 30.

Reeves County, just west of the Permian basin area, was given indications of its first production when Frankley & Rice No. 1 Tunstill, wildcat test in the northern part of the county and about 3 miles northeast of Hagertown, encountered both oil and gas shows in the Delaware lime from 3,289-3,310 feet. The test was bailing about 25 gallons of oil and showing for an estimated 1,500,000 feet of gas as testing continues. Location is in Section 10, Block 56, T.&P. Survey.

In Ector County L. H. Wentz No. 8 Paul Moss, Section 28, Block 44, indicating a half-mile west extension to the Harper pool, was drilling below 4,407 feet, with 2,500 feet of oil in the hole. Possible commercial production has been logged at 3,990-4,042 feet, and if water is encountered before another pay section is found, the test will be plugged back for completion attempts at the upper level.

A new offset location has been taken to the Sharp No. 1 Crum, half-mile north extension to the Keystone pool in Winkler County, by the Gulf Oil Corp. It is No. 29 Keystone, Section 6, Block B-2, P.S.L. Survey.

Northern Pecos County was given a deep Ordovician wildcat over the past week when the Anderson-Prichard Oil Corp. announced plans to drill in the Masterson pool of the county. The test will be about 18 miles south of the Magnolia Petroleum Co. No. 1-A McKee, failure in the Ordovician.

Andrews County suffered a failure when Humble Oil & Refining Co. No. 1-G University, Section 18, Block 4, wildcat test 1 mile southeast of the Means pool in northern Andrews County, began flowing salt water from a total depth of 4,942 feet.

North Basin Area

In Hockley County final gauge of 16 bbls. of oil per hour was given Sid W. Richardson No. 2 Slaughter, extending the north end of the Slaughter pool 1 mile to the east. Pay was topped at 4,933 feet and the test is bottomed at a plugged-back depth of 4,978 feet. On the south end of the pool Snowden & McSweeney No. 1 Slaughter, Labor 74, League 35, Zavalla County School Land Survey, one-half mile eastern extension to the area, is drilling plug after setting casing at 4,747 feet.

WEST CENTRAL TEXAS

The possibility of a new Caddo lime pool in Shackelford County, together with new locations and pool extensions for other West Central Texas counties, headed the development in that area over the past week.

In Shackelford County Pethybridge & Gordon No. 1 C. B. Snyder, 5 miles west of Moran and in the NE cor. of Section 38, State Asylum lands, topped oil-saturated lime at 3,605 feet and carried it to 3,660 feet. Casing has been set at 3,605 feet and operators estimated the well at about 20 to 30 bbls., natural flow. In the Ivy pool, also in Shackelford County, Hammond No. 1 Coker-Mansker, one-half mile north extension to the area, is preparing to test after having encountered oil from 4,929-42 feet. Location is in Section 159, B.B.B.&C. Survey.

The View pool in Taylor County was assured a north extension when Forster & Charter No. 2 Frederickson, Subdivision 17, Guadalupe County School Land Survey, drilled 32 feet of lime saturation from 2,332-80 feet. The test has been estimated for about 100 bbls. per day. However, preparations are being made for an acid treatment.

Three offsets of the Brazos Young Corp. No. 1 Wray, deep wildcat discovery in Young County, 4 miles southeast of Newcastle, are planned. Pitzer & West, who hold acreage near the producer, plan an offset. Brazos Young Corp. has announced an offset to the west in the A. M. Sloan tract and another to the north on the Robert Bullock tract.

Baylor County received a new deep test when Wilcox Oil & Gas Co. spudded in their second deep test in the area in the past few months. Test will be No. 1 Fritz, David Bartow Survey. Contract depth is 6,000 feet. The company's first test was a failure at the same depth.

WEST TEXAS COMPLETIONS

(24-hour tests)

Andrews County

Humble Oil & Refining Co. No. 50 J. S. Means, 4,340-4,505 feet, 4,451 bbls.

Cochran County

Texas Co. No. 1 D. S. Wright, dry and abandoned at 4,939 feet.

Crane County

Gulf Oil Corp. No. 180 McElroy, 2,860-3,096 feet, 281 bbls.

Ector County

Atlantic Refining Co. No. 5-B University, 3,400-3,645 feet, 1,863 bbls. Barnsdall No. 2 Witcher, 4,035-4,195 feet, 918 bbls. Blackstock No. 6 T. & P. Lands, 4,005-4,170 feet, 2,693 bbls. Cities Service Oil Co. No. 4-D Cummins, 4,186-4,245 feet, 610 bbls. Gulf Oil Corp. No. 122 Goldsmith, 4,185-4,260 feet, 540 bbls.: No. 123 Goldsmith, 4,140-4,200 feet, 2,392 bbls.; No. 124 Goldsmith, 4,128-88 feet, 3,340 bbls. Landreth Production Co. No. 1-Q Scharbauer, 4,140-92 feet, 375 bbls. Phillips and Pure No. 40 C. Cowden, 4,122-80 feet, 4,942 bbls.; No. 41 C. Cowden, 4,110-65 feet, 1,302 bbls.; No. 3 Jesse Cowden, 4,110-4,223 feet, 1,187 bbls. Shell Petroleum Corp. No. 4-B T. & P. Land Trust, 4,220-88 feet, 819 bbls. Texas Co. No. 5-B J. E. Parker, 4,064-4,200 feet, 1,400 bbls. Texas Pacific Coal & Oil Co. No. 21 Scharbauer, 4,200-60 feet, 1,580 bbls.; No. 32 Scharbauer, 4,195-4,260 feet, 1,298 bbls. L. H. Wentz No. 8-A T. & P. Land Trust, 4,025-4,131 feet, 2,453 bbls.

Gaines County

Humble Oil & Refining Co. No. 2 Riley, 4,877-4,975 feet, 186 bbls.

Howard County

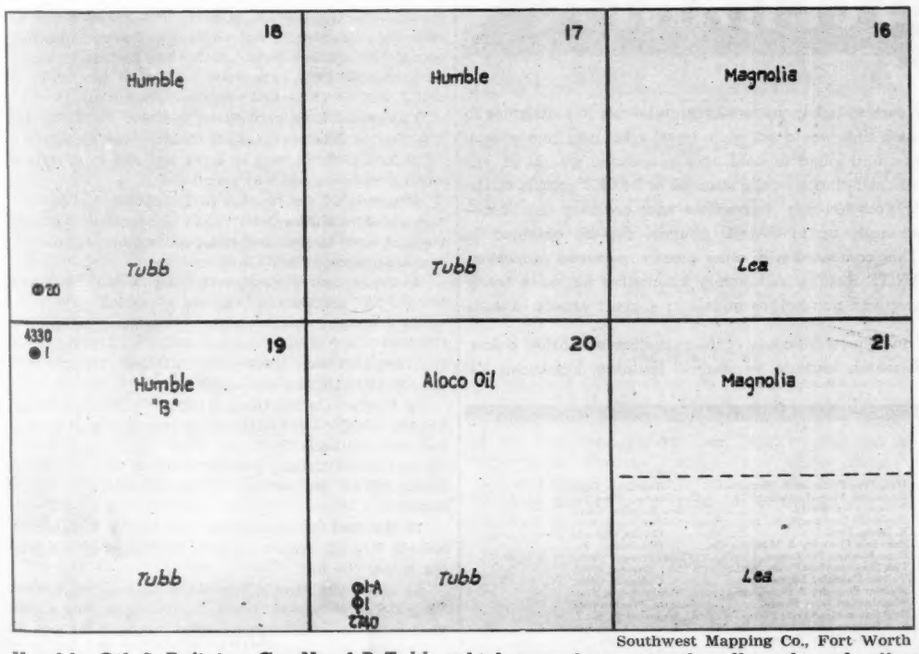
Ennisbrook No. 19 Texas Land, 2,668-2,875 feet, 874 bbls. W. B. Powell, trustee, No. 1 Guitar Trust, 3,394 feet, dry and abandoned.

Ward County

Mid-Continent No. 1 Magnolia-Sealy, 3,033-42 feet, 336 bbls.

Pecos County

Adams No. 7 Masterson, 1,504 feet, dry and abandoned. British American No. 4 Cordez, 2,013-53 feet, 132 bbls. George J. Greer No. 1 Price Estate, 1,919



Southwest Mapping Co., Fort Worth

Humble Oil & Refining Co. No. 1-B Tubb which turned into an oil well, and north offset which is indicating an oil well. Both are southeast extensions to the Tubbs area

feet, dry and abandoned. Pentex No. 3 State Land bld, 1,798-1,823 feet, 510 bbls. Wesley Oil & Gas Co. No. 2 Francis & Lewis, 1,788-1,830 feet, 637 bbls.

Upton County

Basin No. 8-A Baker, 2,213-2,385 feet, 1,095 bbls. Cardinal Oil No. 17 Wooley, 2,154-55 feet, 522 bbls. Porter-Rankin No. 1 Hughes, 2,004-30 feet, 20 bbls. Shell Petroleum Corp. No. 3 Baker, 2,150-2,253 feet, 943 bbls.

Winkler County

Magnolia Petroleum Co. No. 182 Walton, 2,830-2,921 feet, 774 bbls.

Yoakum County

D. Danners No. 2 J. H. Lynn, 4,870-5,085 feet, 239 bbls. Denver Petroleum Co. No. 13 Whittenberg, 4,825-5,050 feet, 717 bbls. J. W. Murchison No. 3-B Elliott, 4,800-5,125 feet, 842 bbls. Texas Co. No. 1 Randall, 4,927-5,150 feet, 140 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Brown County

Marden No. 1 Kilgore, dry and abandoned at 530 feet. Sam Weiner No. 1 Beck, dry and abandoned at 2,725 feet. Whiteside & Rodgers No. 2 Newton, 1,223-47 feet, 20 bbls.

Callahan County

Ferguson & Cross No. 1 Hatchett, dry and abandoned at 464 feet. Sullivan No. 1 Jackson, dry and abandoned at 1,402 feet.

Fisher County

S. and D. Daube No. 1 Hardy, dry and abandoned at 3,731 feet. Magnolia Petroleum Co. No. 3 E. Smith, 3,482-96 feet, 325 bbls.

Jones County

Carroll No. 1 Rogers, 1,932-53 feet, 50 bbls. Healey-Walters No. 4 Daughtry, 1,906-26 feet, 318 bbls. Humble Oil & Refining Co. No. 1 Huddleston, 2,912-23 feet, 1,062 bbls. Rex Outlaw No. 1 Moore, dry and abandoned at 2,163 feet.

Haskell County

Texas Pacific Coal & Oil Co. No. 1 Livingood, dry and abandoned at 3,450 feet.

Parker County

Bradshaw No. 1 Wilson, abandoned at 360 feet. Hollenback No. 1 McNay, abandoned at 960 feet. Mid-Continent Oil Co. No. 1 Flem-Mock, abandoned at 2,096 feet.

Shackelford County

A. B. Bissey No. 6 Isabell, junked and abandoned at 650 feet. Aaron Cohan No. 3 Baker, abandoned location. Keys No. 2 Diller, dry and abandoned at 496 feet. Pemeta Oil Co. No. 4 Hendrick, 700-59 feet, 10 bbls. G. W. Rich No. 1 Lee Ayers, dry and abandoned at 380 feet.

Taylor County

Felmont Corp. No. 1 Blackwell-Phillips, dry and abandoned at 1,805 feet.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Hutchinson County

J. Gordon Burch No. 4 Herring, 3,125-60 feet, 702 bbls. Drilling & Exploration Co. No. 23 Watkins, 3,040-55 feet, 397 bbls.; No. 24 Watkins, 2,953-3,000 feet, 532 bbls. Phillips Petroleum Co. No. 34 Cockrell Ranch, 3,000-68 feet, 263 bbls.; No. 1 Way, 2,941-3,150 feet, 15,400,000 feet gas. Stanolind Oil & Gas Co. No. 18 Watkins A, 2,810-85 feet, 293 bbls.

Oklahoma Fields

(Continued from Page 94)

Oklahoma County

Indian Territory Illuminating Oil Co. No. 4 Bodine, NE NW NW Section 30-11-2w, Oklahoma City field, Oklahoma County, failed to find production and was abandoned at 3,620 feet, total depth.

Coal County

Griggs Brothers No. 1 Spencer, SE SW SE Section 23-1n-8, Coal County, was reported abandoned after drilling to 453 feet, where it was shut down for drill pipe.

H. A. George No. 1-A Spencer, SW SE SW SE Section 23-1n-8, was a rig.

Southwestern Oklahoma

Bridwell Oil Co. No. 5 Seay, SW NW NE Section 30-6s-5w, Oscar-Seay pool, Jefferson County, had line pay at 1,890-99 feet, total depth 1,904 feet, and plugged back to 1,899 feet. It pumped 10 bbls. of 32 gravity oil and 3 bbls. of water in 24 hours, pumping off.

George L. Pace and others No. 6-A Bush, SE NE NW Section 3-2s-8w, Stephens County, was bottomed at 3,230 feet, plugged back to 1,734 feet and shot, showed small production but was abandoned.

Principle Oil Co. No. 1-A King, SW SW NE SW Section 27-7-20w, Kiowa County, had oil showing in granite wash at 1,004-14 feet, but lost underreamer in hole and was abandoned at 1,055 feet, total depth.

In Creek County Strozier Drilling Co. No. 2-A Ricks, SW SE NW Section 12-16-11, was a location.

In Muskogee County Link Oil Co. No. 12 Mathews, C S half N half SW Section 19-15-15, was drilling below 925 feet; Robinson Oil Co. No. 2 Ragan, NE NE NW Section 19-13-16, had spudded.

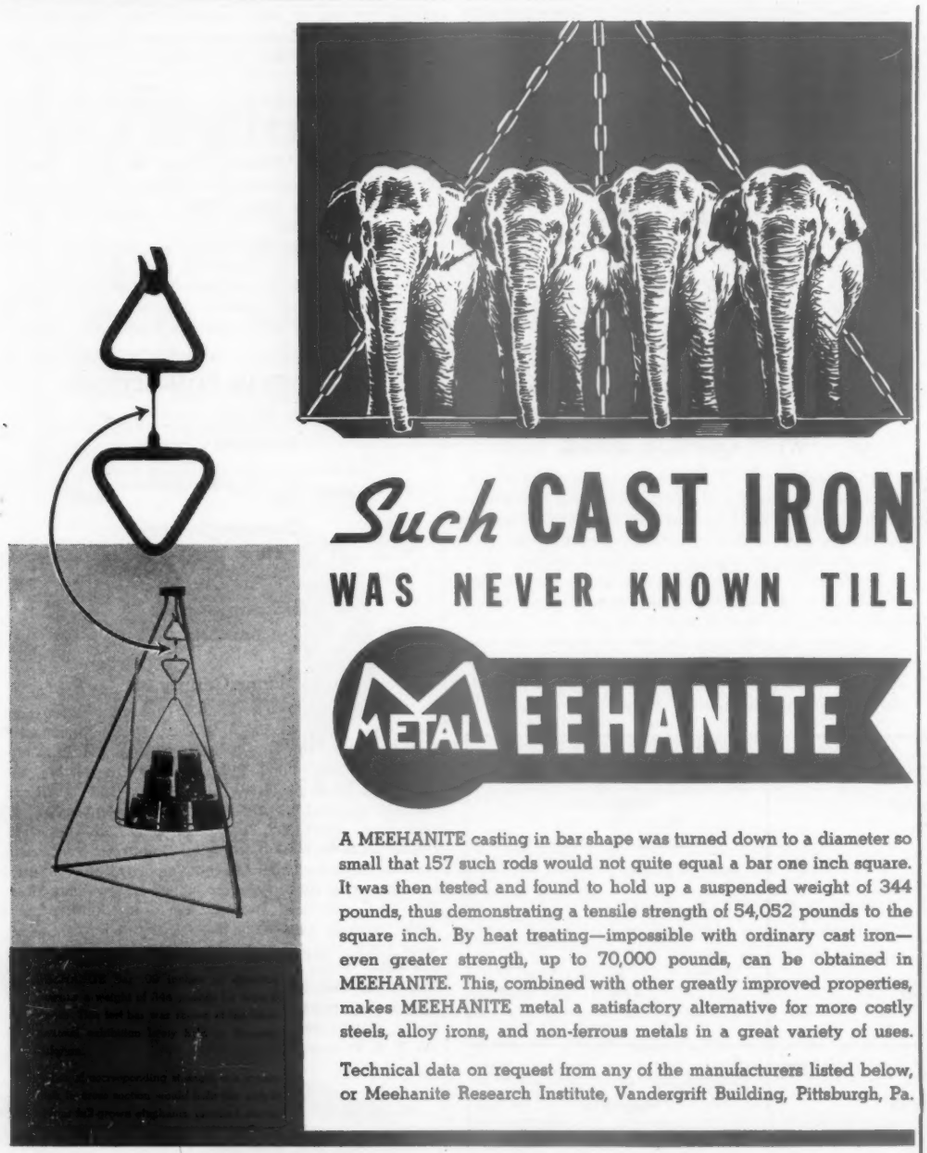
In Hughes County Olson Drilling Co. No. 1-A Estep, SW SE SW Section 11-8-9, set surface casing at 86 feet and was waiting.

In Lincoln County Stanolind Oil & Gas Co. No. 2 James, SE SE SW Section 35-13-5, Wilzetta area, was a location.

In Marshall County Oleander Oil Co. No. 1 Taliferro, NE NE NW SE Section 14-5e-5e, Madill pool, was drilling below 560 feet.

In Comanche County Wichita Oils, Inc., No. 7 Pope, NE NE SW Section 28-2n-10w, Lawton pool, was a location.

In Jackson County R. O. Ray and others No. 1 Thelma, NE SE NE Section 6-1s-19w, Tipton pool, was drilling below 526 feet.



Such CAST IRON
WAS NEVER KNOWN TILL
METAL MEEHANITE

A MEEHANITE casting in bar shape was turned down to a diameter so small that 157 such rods would not quite equal a bar one inch square. It was then tested and found to hold up a suspended weight of 344 pounds, thus demonstrating a tensile strength of 54,052 pounds to the square inch. By heat treating—impossible with ordinary cast iron—even greater strength, up to 70,000 pounds, can be obtained in MEEHANITE. This, combined with other greatly improved properties, makes MEEHANITE metal a satisfactory alternative for more costly steels, alloy irons, and non-ferrous metals in a great variety of uses.

Technical data on request from any of the manufacturers listed below, or Meehanite Research Institute, Vandergrift Building, Pittsburgh, Pa.

MANUFACTURERS:

American Laundry Machinery Co.....Rochester, N. Y.
Atlas Foundry Co.....Detroit, Mich.
Banner Iron Works.....St. Louis, Mo.
Barnett Foundry & Machine Co.....Irvington, N. J.
H. W. Butterworth & Sons Co.....Bethayres, Pa.
Cincinnati Grinders Incorporated.....Cincinnati, Ohio
The Cincinnati Milling Machine Co...Cincinnati, Ohio
Cooper-Bessemer Corporation.....Mt. Vernon, Ohio
M. H. Detrick Co.....Peoria, Ill., Newark, N. J.
Farrel Birmingham Co.....Ansonia, Conn.
Florence Pipe Foundry & Machine Co.
(R. D. Wood Company, Philadelphia, Selling Agents)
Fulton Foundry & Machine Co.....Cleveland, Ohio
Greenlee Foundry Company.....Chicago, Ill.
Hamilton Foundry & Machine Co. .....Hamilton, Ohio
Kanawha Manufacturing Co.....Charleston, West Va.
Kinney Iron Works.....Los Angeles, Calif.
Koehring Company.....Milwaukee, Wis.
E. Long, Ltd.....Orillia, Canada
Rosedale Foundry & Machine Co.....Pittsburgh, Pa.
Ross-Meehan Foundries.....Chattanooga, Tenn.
The Stearns-Roger Mfg. Co.....Denver, Colo.
Vulcan Foundry Company.....Oakland, Calif.
Warren Foundry & Pipe Corp.....Phillipsburg, N. J.
Washington Iron Works.....Seattle, Washington
Australian Meehanite Metal Co., Ltd., Waterloo, N. S. W.
The International Meehanite Metal Co., Ltd. ..London
Meehanite Metal Corporation.....Pittsburgh, Pa.

North and East Texas

By
D. H. STORMONT

North and South Extensions to K.M.A. Pool Are Indicated

WICHITA FALLS, Tex., Oct. 10.—North and south extensions for the K.M.A. pool and the possibility of another new producing horizon in the Hull-Silk pool in northern Archer County centered attention in North Texas over the past week.

A one-half mile north extension for the north side of the K.M.A. pool was indicated when Moran Brothers No. 1-M Waggoner, Block 6, H. George Survey, found oil sand at 3,826-34 feet. Casing has been cemented on top of the sand for a test. Possibility of another south extension of the K.M.A. pool into Archer County was seen when C. H. Staley No. 6 Mangold, Block 30, P. Castleman Survey, topped the lime at 3,690 feet and the sand at 3,780 feet. Hole is bottomed at 3,855 feet and is swabbing oil, not yet to the extent of a commercial producer.

Archer County

In the three-level Hull-Silk pool in northern Archer County, Sinclair Prairie Oil Co. No. 1 Hool, Block 18, A.T.N.C.L. Survey, 2 miles west of the pool proper, missed the 3,800-foot and the 4,300-foot pay levels and in drilling to the third or 5,100-foot level, encountered saturation from 4,950-65 feet. Casing has been set and a production test will be made the first of next week.

Wilbarger County

A new deep producing horizon for the Castlebury pool of Wilbarger County was seen when Phillips Petroleum Co. No. 1 Servatius, Section 78, Block 14, H.&T.C. Survey, encountered saturation from 2,627-39 feet. The well has been estimated at 500 bbls. daily and is the first production in the pool from the Milam sand. Regular pool pay is the Dyson sand at 2,100 feet.

EASTERN TEXAS

DALLAS, Tex., Oct. 10.—The East Texas field had 97 new wells added during September, according to the monthly summary of the Railroad Commission. There were 43 wells completed by major companies and 54 by independent operators. A total of 25,542 wells producing at the end of September had yielded 11,351,213 bbls. of allowable oil. Tankcar shipments of refined products from the field during the month amounted to 24,746,802 gallons, or 2,911 tankcars, of which 11,255,934 gallons were gasoline. Of the 1,395 tankcars shipping gasoline, 924 moved interstate, 346 intrastate and 135 coastwise.

Flag Lake Pool

Already hampered in development by the lack of a pipe line outlet, the Flag Lake pool of Henderson County received another setback when the single buyer of its crude, Master Petroleum Co., announced that because of market conditions no more crude would be purchased. The company had been buying the oil for 90 cents per barrel at the well and trucking it to its Dallas refinery, but could not compete with cheaper crudes from elsewhere, the availability of 35 cents per barrel crude from the East Texas field through the confiscation procedure.

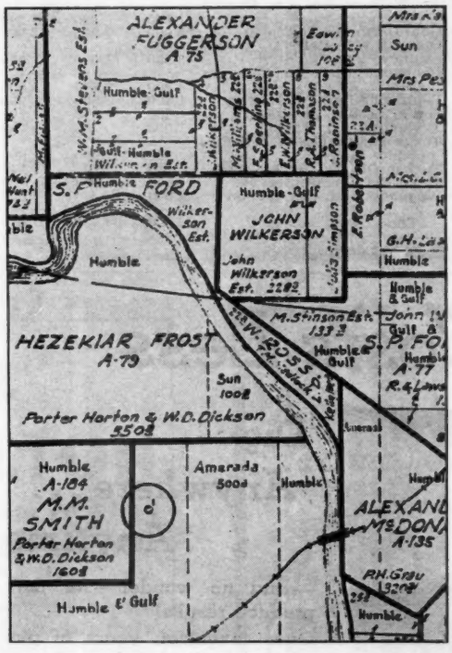
A new wildcat outpost for the Flag Lake pool was started when High Point Oil Co. staked location for No. 1 W. A. Peavey, about 9 miles southwest of Mabank, and southeast of production in the field. Location is about one-half mile southeast of a dry hole drilled by the same company earlier in the summer.

Gregg County

Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 Horton, in the Henry Hudson Survey, deep wildcat in Gregg County about 3 miles southwest of Longview, is indicating production from the deep Trinity formation. The test is about 1 mile southwest of the same operator's No. 1 Robinson, completed for a large gas well from the Pettit formation of the lower Marine Trinity. No. 1 Horton is bottomed at 7,303 feet and is also producing from the Pettit formation. The well is still being tested. It had made 8,900,000 feet of gas with pressures of 2,300 pounds on the tubing and 2,500 pounds on the casing on latest reported gauge.

Anderson County

A new deep Glen Rose distillate producer in the Woodbine producing Cayuga field of Anderson County was seen over the week when Roeser & Pendleton No. 3 Bowyer, in the E. Ritter Survey, on the northwest corner of the pool flowed 260 bbls. of distillate



Zingery Oil Map Co., Fort Worth

Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 Horton test, in Gregg County, which is indicating a second deep Trinity gas well for the area

and 6,000,000 feet of gas in 24 hours. Total depth is 7,600 feet. This is the third distillate well in the field and the first on the west side of the field.

Opelika Area

Third and long awaited test for the Opelika area of northwestern Henderson County was staked by the three joint operators in the area, Tide Water Associated Oil Co., Seaboard Oil Corp. and Humble Oil & Refining Co. The test will be No. 1 McGee, about 1 mile north of the discovery well. There are two producers in the area at present, one of these a wet gas well and the other the discovery oil well.

EAST TEXAS FIELD COMPLETIONS

(One-hour production)

Gregg County—Kilgore Area

Atlantic Refining Co. No. 6-A Godfrey, 3,552-3,675 feet, 97 bbls. Barnett Petroleum Corp. No. 2 Willis, 3,540-36 feet, 40 bbls. B. F. Carroll No. 2 Hendricks, 3,540-58 feet, 20 bbls. Magnolia Petroleum Co. No. 6 O. Hilburn, 3,732-34 feet, 38 bbls. Potter Brothers No. 2 Crim, 3,540-75 feet, 40 bbls. J. R. Sharp No. 4 King, 3,518-31 feet, 102 bbls. Shell Petroleum Corp. No. 26 Willoughby, 3,535-3,626 feet, 70 bbls. E. H. Suhr, Trust, No. 1 Butts, 3,560-63 feet, 30 bbls. Ulmer-Livingston No. 1 E. Still, 3,504-68 feet, 10 bbls.; No. 2 E. Still, 3,520-80 feet, 8 bbls.; No. 3 E. Still, 3,524-90 feet, 10 bbls.

Gregg County—Longview Area

Shell Petroleum Corp. No. 33 G. W. Richey, 3,563-3,663 feet, 70 bbls.; No. 34 G. W. Richey, 3,545-3,774 feet, 40 bbls.; No. 35 G. W. Richey, 3,559-3,643 feet, 60 bbls. Stanolind Oil & Gas Co. No. 33-B K. F. Lathrop, 3,560-3,601 feet, 46 bbls.; No. 5 M. McKinley, 3,527-84 feet, 53 bbls. J. Thomas No. 1 G. J. McGrede, 3,612-18 feet, 72 bbls. Washington Oil Co. No. 10 William Cobb, 3,536-56 feet, 85 bbls.

Rusk County—Kilgore Area

Glier Brothers No. 4 D. Florence, dry and abandoned 3,890 feet. Gulf Oil Corp. No. 38-C Christian, 3,717-24 feet, 45 bbls.

Rusk County—Joiner Area

Humble Oil & Refining Co. No. 50-A S. A. Plowman, 3,689-3,704 feet, 57 bbls.; No. 29 C. J. Thompson, 3,670-89 feet, 62 bbls. Retsol Drilling Co. No. 7 L. B. Rollins, 3,606-16 feet, 90 bbls.

Upshur County

General American No. 20-B A. J. Sanders, 3,652-52½ feet, 40 bbls. Humble Oil & Refining Co. No. 13 J. M. Smith, 3,635-68 feet, 38 bbls.; No. 14 J. M. Smith, 3,640-60 feet, 42 bbls. Texas Co. No. 11 A. G. Dearing, 3,668-70 feet, 17 bbls.

Smith County

Weaver-Crim No. 13 T. Stone, 3,749-54 feet, 60 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour production)

Anderson County

In the Long Lake field, H. L. Hunt No. 1 Keeling, 5,330-43 feet, 69 bbls.

In the Cayuga field, Tide Water-Seaboard No. 1 McMahon, 3,992-4,000 feet, 21 bbls.

Dallas County

Plaza Oil Co. No. 1 Davidson, dry and abandoned at 3,628 feet.

Franklin County

In the Talco field, Byrd-Frost No. 22 Phillips, 4,200-4,304 feet, 139 bbls.

Leon County

Wynne Drilling Co. No. 1 H. L. Brown, 6,092 feet, dry and abandoned.

NORTH TEXAS COMPLETIONS

Archer County

S. H. Brown No. 2 W. Ford, 1,102 feet, dry. H. A Schaeffer Oil Co. No. 4 W. P. Ferguson A, 3,770-3,870 feet, 600 bbls. C. H. Staley and others No. 5 Mrs. Anna Mangold, 3,764-3,890 feet, 488 bbls. Texas Co. No. 2 J. Cuba, 1,550 feet, dry. Underwood & Campbell No. 28 Campbell, 1,007-17 feet, 100 bbls.; No. 31 Campbell, 984 feet, dry.

Clay County

Duncan and others No. 2 fee, 1,152-60 feet, 15 bbls.

Joellen Oil Co. No. 5 State of Texas, 1,099-1,120 feet, 102 bbls. Metzner & Burns No. 13 L. Thornberry, 198-211 feet, 6 bbls. Murchison and others No. 1 J. Boyle, 1,382 feet, dry.

Cooke County

Seitz, Comegys and others No. 1 H. Felderhoff B, 1,200-1,214 feet, 65 bbls. Trumter Petroleum Corp. No. 10 Mrs. C. E. Stacey, 722-740 feet, 65 bbls.

Jack County

General American Oil Co. of Texas No. 1 Ben Gunter, 3,253 feet, dry. Nelson Oil Syndicate No. 6 J. P. Eatherly, abandoned location. J. B. Sneed No. 5 J. M. Bloodworth, 304-10 feet, 10 bbls. C. M. Williams No. 1 J. H. Henderson, 350 feet, dry.

Montague County

Continental Oil Co. and others No. 17 S. J. Hott, 2,112-2,126 feet, 160 bbls. Gibson & Jennings No. 3 J. G. Howard, 2,395 feet, dry.

Wichita County

King Oil Co. No. 1 Perkins Cullum, 2,626-38 feet, 536 bbls. R. B. Magee No. 3 C. C. Burrows, 877 feet, dry. Bridwell Oil Co. No. 6 T. A. Womack, 3,798-3,839 feet, 600 bbls. L. T. Burns No. 20 Sue Mitchell, abandoned location. Christie Hickman Drilling Co. No. 9 W. P. Bolding, 3,644-3,870 feet, 1,000 bbls. Consolidated Oil Co. No. 1-A J. P. Griffin, 642 feet, dry. Continental Oil Co. No. 2-B L. Kempner, 3,794-3,830 feet, 368 bbls. Curtis & Caraway No. 1 Mrs. J. James, 4,028 feet, dry; No. 2 Mrs. J. James, abandoned location. EC Oil Co. No. 6 G. W. Lewis A, 3,750-3,791 feet, 640 bbls. Fain-McGaha Oil Corp. No. 8 M. Fain, 3,754-3,855 feet, 936 bbls. Fresno Oil Co. No. 1-A L. F. Ramming A, 2,826 feet, dry. Geier Brothers & Jackson No. 2-A Preston, 4,035 feet, dry. Golding & Cochran No. 4 D. R. Preston, 3,930-3,953 feet, 1,188 bbls. W. B. Hamilton No. 1 N. H. Martin A, 3,741-3,791 feet, 837 bbls. Hammon, Hanlon & Buchanan No. 15 Fassett & Tuttle, 3,920-4,017 feet, 555 bbls. King Oil and Perkins & Cullum No. 6 Charles Pettit, 3,688-3,725 feet, 795 bbls. Magnolia Petroleum Co. No. 2 R. L. Kempner B, 3,797-3,829 feet, 492 bbls. D. W. Power and others No. 7-A D. E. Hooks, 130 feet, dry. E. J. Stump No. 1 T. B. Michie, 4,001 feet, dry. Sam K. Vierson and A. D. Cockran No. 1 S. W. Wigley A, 3,725-3,980 feet, 230 bbls. H. H. Wegener No. 5 First National Co. 3,735-3,825 feet, 784 bbls. Witherspoon & Delaney No. 2 G. L. Nance, 3,803-81 feet, 240 bbls.

Young County

Delmarva Oil Corp. No. 1 W. J. Ragle, 1,102 feet, dry. J. J. Eagan No. 1 A. T. Dahse, 1,303 feet, dry. T. D. Humphrey No. 1 W. H. Burnett, 4,160 feet, dry. Kleiner and others No. 63 C. W. Langston, 550-59 feet, 5 bbls. J. Labuzan No. 2 R. D. Webb, 730 feet, dry.

Grayson County

Mildred Oil Co. No. 1 L. C. Neatherly, 3,868-3,905 feet, 288 bbls.

Mid-Continent Crude Runs

(Continued from Page 66)

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Falls Ref. Co., Wichita Falls	2,500	500	500
Gratex Ref. & Fuel Oil Co., Graham	300	285	285
Gulf Oil Corp., Fort Worth	8,000	7,000	7,000
Hightower Oil & Ref. Corp., Brownwood	750	200	200
Jacksboro Ref. Co., Jacksboro	400	150	150
La Salle Pet. Co., Burkburnett	3,000	1,000	1,000
Magnolia Pet. Co., Fort Worth	7,500	6,330	6,330
Midway Ref. Co., Goldsboro	300	100	100
North Texas Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	3,900	3,900
Olney Oil & Ref. Co., North Olney	3,500	1,000	1,000
Panhandle Ref. Co., Wichita Falls	4,200	2,800	3,000
Panhandle Ref. Co., Luegers	1,500	900	900
Southland Ref. Co., Olney	500	100	100
Taylor Ref. Co., Taylor	1,000	750	750
Texas Pacific Coal & Oil Co., Caddo	800	600	600
Tucker Oil Co., Burkburnett	250	155	145
Tydal Ref. Co., Gainesville	1,850	(*)	(*)
Waggoner Ref. Co., Vernon	4,000	(*)	3,000
Total	62,300	34,450	37,680

*Shut down.

SOUTHWEST TEXAS

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Carle Ref. Co., Inc., San Antonio	1,000	(*)	(*)
Dale Ref. Co., Dale	500	300	300
Eggleston Oil Products Co., Three Rivers	1,000	1,000	800
Humble Oil & Ref. Co., San Antonio	5,000	3,500	3,500
Ina Oil & Ref. Co., Hondo	400	(*)	(*)
Magnolia Pet. Co., Luling	8,000	4,000	3,930
Misko Refineries, Inc., Mirando City	4,500	(*)	(*)
Pettus Oil & Ref. Co., Pettus	1,000	900	800
Phoenix Ref. Co., San Antonio	1,200	700	700
Phoenix Ref. Co., Pettus	900	500	500
Pioneer Oil & Ref. Co., Somerset	2,000	900	750
Rado Ref. & Prod. Co., McAllen	800	500	500
Texas Co., San Antonio	5,000	2,600	2,600
Border Oil & Ref. Co., Sullivan City	1,000	400	400
Total	33,100	15,300	14,780

*Shut down.

WEST TEXAS AND PANHANDLE

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Aero Gas & Ref. Co., Fort Stockton	350	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	(*)	(*)
Cosden Oil Co., Big Spring	12,500	8,500	10,000
Danciger Refs., Inc., Pampa	6,500	4,800	5,000
Danube Oil Corp., Borger	1,200	500	500
Farmers Ref., The, Lubbock	500	200	200
Gulf Oil Corp., Sweetwater	7,000	6,800	4,880
Howard County Ref. Co., Big Spring	2,000	600	600
Moutray Oil Co., Hawley	1,400	600	525
Onyx Ref. Corp., Hawley	3,000	1,700	1,700
Panhandle Ref. Co., Kings Mill	2,500	1,500	1,800
Payward Ref. Co., Shamrock	600	600	600
Phillips Pet. Co., Borger	35,000	25,000	25,000
Post Refining Co., Rotan	800	675	675
Shamrock Oil & Gas Corp., Sunray	3,000	2,000	2,000
Shamrock Oil & Gas Corp., Lefors	1,600	1,200	1,200
Standard Oil Co. of Texas, El Paso	14,000	7,400	7,400
Stamford Ref. Co., Stamford	450	400	400
Star Light Ref. Co., Ballinger	1,000	150	150
Texas Co., El Paso	2,000	1,300	1,300
Texas Co., Amarillo	6,000	3,000	3,000
Western Ref. Co., Fort Stockton	1,000	100	100
Wickett Pet. Co., Wickett	3,500	2,500	2,500
Total	122,050	77,625	77,630

*Shut down.

KANSAS

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Barnsdall Ref. Co., Wichita	5,000	5,000	5,000
Bay Pet. Co., McPherson	4,000	3,750	3,750
Chanute Ref. Co., Chanute	1,000	1,000	1,000
Chase Ref. Co., Chase	800	(*)	(*)
Derby Oil Co., Wichita	8,000	5,500	5,500
El Dorado Ref. Co., Eldorado	5,000	4,000	4,500
Falcon Ref. Co., Inc., Great Bend	1,000	850	850
Globe Oil & Ref. Co., McPherson	13,000	12,500	12,000
Kanotex Ref. Co., Arkansas City	12,000	5,500	7,000
National Ref. Co., Coffeyville	8,000	5,000	5,000
Pet. Products Co., Chanute	1,250	1,000	1,000
Phillips Pet. Co., Kansas City	23,000	17,500	17,500
Roper Pet. Co., Parsons	750	400	325
Shallow Water Ref. Co., Scott City	2,500	1,250	1,100
Shell Petroleum Corp., Arkansas City	20,000	(*)	(*)
Sinclair Ref. Co., Coffeyville	12,000	8,200	8,200
Sinclair Ref. Co., Argentine	11,000	8,000	8,000
Skelly Oil Co., Eldorado	23,000	20,000	20,000
Socony-Vacuum Oil Co., Inc., Augusta	20,000	16,500	16,500
Standard Oil Co. (Indiana), Neodesha	7,500	7,400	7,400
United Ref. Co., Russell	1,200	800	800
Vickers Pet. Co., Potwin	4,000	3,000	3,800
Total	184,640	127,150	129,225

*Shut down.

NORTH LOUISIANA

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Arkansas Fuel Oil Co., Bossier City	25,000	19,000	19,000
Atlas Pipe Line Co., Shreveport	12,500	9,000	9,000
Bayou State Oil Corp., Hosston	750	500	500
East Texas Ref. Co., Sandra	7,000	2,800	2,800
Lake-Price Refineries, Inc.	800	500	500
Premier Oil Ref. Co. of Texas, Cotton Valley	3,000	2,500	2,000
Rodessa Oil & Ref. Corp., Cedar Grove	12,000	10,500	10,500
Stanolind Oil & Ref. Co., Superior	5,000	1,200	1,200
Total	62,250	46,000	45,500

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs Oct.	Sept.
Berry Asphalt Co., Waterloo	2,000	1,000	1,000
Henry H. Cross, Smackover	6,000	3,000	3,000
Lion Oil Ref. Co., El Dorado	17,000	13,225	15,000
Macmillan Pet. Corp., Norphlet	2,500	2,300	2,000
Root Pet. Co., El Dorado	10,000	6,000	6,300
Stephens Ref. Co., Stephens	700	500	500
Total	38,200	26,025	27,800

Your Ditch Costs Less

with

Dig *Anywhere . . . Anytime*

— and no wonder — for they produce results!

Over seventeen years of pioneering in the building of compact mobile machines has placed "Clevelands" in front rank for economy.

Rugged and dependable they handle the toughest jobs at satisfactory speeds. Yet, because of their extreme flexibility and modern construction they enable you to "cut the corners"—eliminate lost time and waste motion — produce more at less expense.

Let us prove Clevelands value on your next job without obligation. Write today for details.

One important "Cleveland" idea that adds to the versatility of performance is illustrated at the right—low cost transportation, at truck speed, via special trailer—"Clevelands" load or unload in 10 to 15 minutes.

Special Trailers for Truck Speed Transportation

THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Trencher"

20100 St. Clair Ave. . . Cleveland, Ohio

CLEVELANDS

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Oct. 8. — Crude production from all Canadian fields in July totaled 693,332 bbls. compared with a June output of 537,654 bbls., and 244,931 bbls. in July, 1937. For the seven months of 1938 the Canadian output was 3,612,757 bbls. against 1,307,554 bbls. in the same period last year.

In July, Alberta produced 678,243 bbls. compared with 521,895 bbls. in June. New Brunswick increased from 1,624 bbls. in June to 1,867 bbls. in July, while Ontario dropped from 14,135 bbls. to 13,222 bbls.

For the seven months' period, compared with 1937, New Brunswick increased from 9,468 bbls. to 10,724 bbls.; Ontario declined from 97,858 bbls. to 94,420 bbls.; and Alberta was up from 1,196,563 bbls. to 3,507,613 bbls.

A further increase in Alberta production is indicated for August, output from all Alberta fields in that month establishing a new high of 799,023 bbls. against 678,243 bbls. in July. The August figures bring Alberta production for the eight months of 1938 to 4,306,636 bbls. compared with 1,459,461 bbls. in the same period last year.

With allowable production for Turner Valley crude now fixed at 22,000 bbls. a day, potential flow is estimated around 52,000 bbls.

West Side Drilling

In the northwest extension of West Central Turner Valley, Sun Ray Oil Development Co. No. 1, LSD 8, Section 13-19-3w5, is below 460 feet, underreaming and carrying 16-inch casing.

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 34, LSD 7, is in the Blairmore formation below 6,020 feet. Royalite No. 37, LSD 11, offsetting Vulcan-Brown No. 1 producer to the west, is spudding.

In Section 32-18-2w5, National Petroleum Corp. No. 3, LSD 15, is working on cellar. Rotary outfit will be used. Royalite Oil Co. No. 36, LSDs 13-14, is below 2,083 feet. Vantage Oils No. 1. LSD 12, offsetting Royalite No. 30 producer to the west, has resumed with cable tools after completing water shutoff at 96 feet, and will change to rotary around 3,000 feet. Davies Petroleums No. 4, LSD 10, same section, entered the belemnite horizon around 6,700 feet and is getting close to the Madison below 6,743 feet. West Turner Petroleums No. 3, LSD 6, is below 6,535 feet.

In Section 29-18-2w5, Command Oils No. 1, LSD 14, is below 6,431 feet. In Section 20-18-2w5, Producers Crude Corp. No. 1, LSD 11, is below 6,304 feet. York Oils No. 2, LSD 6, one-quarter mile northwest of No. 1 producer, is working on cellar.

In Section 16-18-2w5, Royal Canadian Oil Co. No. 2, LSD 4, is in the upper Dalhousie sand below 6,560 feet and getting close to the Madison limestone. It is logging closely with Royalite No. 32 producer immediately northwest. Okalta Oil Co. No. 8, LSD 6, is below 1,800 feet.

In Section 9-18-2w5, D. & D. Oils No. 1, LSD 12, is below 2,628 feet after cementing 10-inch casing at 2,530 feet.

West of the proven field, Scottish Petroleums No. 1, LSD 16, Section 19-18-2w5, is resuming from 960 feet after changing to rotary.

Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, is in the Blairmore formation below 7,344 feet.

Tests in the Lime

On the west flank of Turner Valley. Consolidated Royalties No. 1, LSD 14. Section 20-18-2w5, is below 7,753 feet after getting the Madison limestone at 7,545 feet.

In Section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is below 6,933 feet. It got the lime at 6,657 feet and is expected to be the next completion. In the same section, Richwell Oil Co. No. 1, LSD 5, which is being completed by Neil McQueen and associates of Vancouver, is below 6,707 feet after getting the Madison at 6,676 feet and cementing at 6,688 feet.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 35, LSD 7, Section 27-20-3w5, is in the Blairmore formation below 3,315 feet and apparently logging high.

Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, is in the Blairmore formation below 7,032 feet after drilling through the Home sand, and expected to get the Madison lime around 7,500 feet.

East Side Oil Shows

On the Calling Valley structure, east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, Section 8-20-2w5, is below 6,970 feet after encountering some small oil shows. It is believed close to a potential commercial oil horizon.

On the New Valley structure northeast of Turner Valley, McLeod Oil Co. No. 1, LSD 4, Section 6-21-2w5, is deepening below 8,442 feet.

Highwood Oil Show

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is below 6,275 feet, more than 915 feet in the Madison lime, with shows of thick heavy crude resembling grease. The drill entered the greenish lime around 6,247 feet, and on deepening, the heavy crude began to show, apparently seeping through small fissures. The crude was mixed with mud and accompanied by some gas, and became clearer and lighter as the hole was deepened. Location is 5 miles west and about 2½ miles south of National Petroleum Corp. No. 2, the nearest producer.

"A·P·I SPECIAL"
VIA FRISCO-ALTON
TO Nineteenth Annual Meeting
American Petroleum Institute
CHICAGO, NOVEMBER 14-18

Schedule—
OF THE FRISCO-ALTON SPECIAL TRAIN
Lv. TULSA .... 4:00 pm Nov. 13
Ar. CHICAGO 7:45 am Nov. 14

In addition to drawing-room and compartment, there will be double bedroom sleeping cars, deluxe lounge and dining cars — all completely air-conditioned.

SPECIAL TRAIN RETURNING

A special train returning is planned on the following schedule:
Lv. CHICAGO 5:00 PM, NOV. 18
Ar. TULSA 8:30 AM, NOV. 19

The number desiring this service will determine its operation, so we suggest you make your reservations early.

A completely air-conditioned special train with every modern luxury will be operated by the Frisco-Alton to Chicago for the annual API Convention . . . when you make your plans to go, begin by calling the Frisco Travel Bureau . . . we have a block of rooms at the Stevens Hotel which we will assign when pullman reservations are made. The usual delay will be eliminated by special registration for Frisco-Alton patrons.

FRISCO LINES
ST. LOUIS-SAN FRANCISCO RY.

J. E. PAYNE, Traffic Manager, Frisco Lines
L. A. DAVIS, District Passenger Agent, Alton Railroad
P. F. ATKINSON, Division Passenger Agent, Frisco Lines
For reservations and additional information call

THE ALTON RAILROAD COMPANY — CHICAGO TERMINUS — "The ONLY WAY" — KANSAS CITY

FRISCO TRAVEL BUREAU Philcade Bldg, Tulsa, Okla. PHONE 3-3151

It's Winning Quick, Widespread Acceptance for Solving Troublesome Leak Problems

Patent Pending
1-Gal. size shown here. Sold also in other handy sizes

Since **RECTORSEAL, the Positive Leak Preventer,** was placed on the market 5 months ago it has proved itself to be the outstanding leak preventer on the following applications:

- **RUNNING CASING AND TUBING** (Treating collar threads)
- **DRILLING RIG CONNECTIONS** (Mud, Oil, Water and Steam Lines)
- **SEPARATOR AND FLOW LINE CONNECTIONS**
- **TREATING INSIDE OF BOLTED TANKS**
- **NATURAL GASOLINE PLANTS AND REFINERIES** (Gasoline, Steam and Acid Lines)
- **GAS DISTRIBUTION SYSTEMS** (Meter installations)

RECTORSEAL, in this short period, has been found so far superior to all conventional thread fillers that many oil companies have made it their standard for treating threaded connections against leaks. You, too, can have the advantages of this revolutionary discovery. Buy it through your supply store, or write direct for smear sample.

Made by the makers of
RECTORHEAD
Successor to the Bradenhead

RECTOR WELL EQUIPMENT CO., INC.
HEADQUARTERS: Fort Worth, Texas. BRANCHES: Houston, Wichita Falls, Midland, Corpus Christi, Los Angeles, Tulsa, Shreveport, Casper.

Kansas Developments

By
DAL DALRYMPLE

Open Four Producing Areas; Start Wildcat Near Capital

Discoveries and extensions continue to feature news of the Kansas oil fields, nearly 50 strikes having been recorded in the Sunflower state thus far in 1938. Completions of the past week included one discovery, while three other wildcats gave promise of opening new producing areas.

One of these was Pryor & Lockhart and G. M. Smith No. 2 Wilson, NE NW NW Section 9-33-6, some 4 miles northwest of Dexter in Cowley County. The drill entered Arbuckle formation at 3,514 feet and penetrated to 3,517 feet, total depth. Oil rose 3,000 feet in the hole in 2½ hours after drilling into the formation and soon was slopping over top of the hole. Within five hours it began flowing at the rate of 15 bbls. an hour, later increasing to 35 bbls. an hour. It was shut in early Friday to permit operators to run 5-inch casing for completion. Six-inch casing had been set at 2,600 feet, the hole being open below that level. The wildcat had Mississippi lime at 3,112-3,455 feet, and Chattanooga shale from there to top of the Arbuckle. The No. 2 Wilson is one-half mile north of No. 1 Wilson, which showed for a small chat producer but was abandoned after pay was inadvertently cemented off and oil failed to come back. The No. 2 Wilson also found small production in chat but operators decided to deepen to the Arbuckle when water intruded in the upper formation. The location is about 11 miles southeast of Winfield.

Another producing sector in Rice County was opened at John H. Tatlock No. 1 Burchart, SW NW Section 18-20-10w. It was rated potentially at 310 bbls. of oil daily from Arbuckle lime at 3,290-95 feet, total depth. The location is three-fourths mile west of the Wenke pool, same distance northeast of the South Silica pool and 1 mile south of the Silica field.

Atlantic Refining Co. No. 1 Wise, NW cor. Section 13-24-14w, 3 miles southwest of St. John in Stafford County, made potential of 1,494 bbls. of oil in 24 hours to open a Lansing-Kansas City lime pool. It was given 4-stage acid treatment. It originally was bottomed in dry Arbuckle lime at 4,173 feet, where 7-inch casing was set. It was plugged back to 4,131 feet and casing was perforated at 3,812 to 3,820 feet, producing from the Lansing series topped at 3,583 feet.

Another effort to find oil in northeastern Kansas, an area that is becoming increasingly interesting to oil men, is to be made in Shawnee County, 7 miles west of Topeka. W. M. McKnabb, Winfield operator, has staked location for No. 1 Fritz, SW SE NW Section 4-12-14. Nearest production is in the Baldwin pool, 36 miles southeastward in Douglas County.

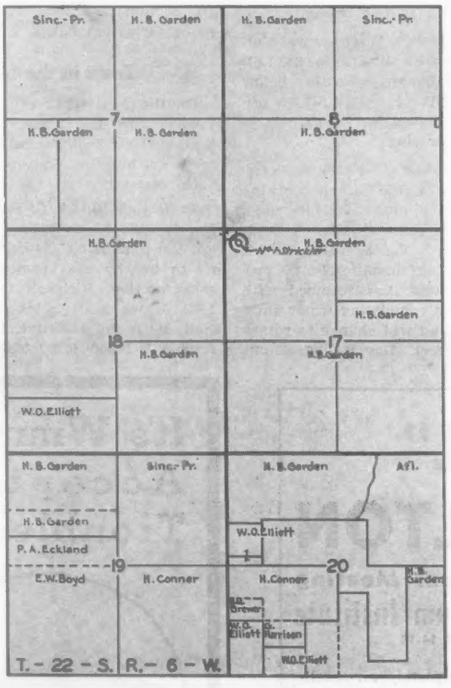
Wildcat Activity

Fred Haines and others No. 1 Dorr, SE SE SW Section 13-9s-16w, was completed as a minimum well to open a new Lansing lime-producing area 1½ miles southeast of the Laton pool in Rooks County. Originally bottomed in granite at 3,610-13 feet, it was plugged back to 3,350 feet in Lansing-Kansas City lime, acidized and pumped 15 bbls. of oil in 24 hours. It had lime pay at 3,336-42 feet, top of the formation being 3,247 feet. The drill entered anhydrite at 1,290 feet, Fort Riley 2,050 feet, and cherty conglomerate at 3,599 feet.

Fleming and others No. 1 Central Life, SW cor. Section 27-14-15, Woodson County wildcat, had Mississippi lime at 1,431 feet and was dry and abandoned at 1,560 feet, total depth.

Seidhoff & Blaksley No. 1 Eckel, SE cor. Section 17-27-7, Butler County, and A. J. Scherzer No. 1 Krey, SE SE SW Section 19-23-10w, Reno County, wildcat locations, were reported temporarily abandoned.

The following new wildcat activity was abandoned: Cities Service Oil Co. No. 1-A Samuelson, C NE Section 36-11-17w, Ellis County, was a location. Phillips Petroleum Co. No. 1 Tanzey, C NW SW Section 25-8-18w, Rooks County, was rigging up rotary. J. C. Shaffer, Inc., No. 1 Barrett, SW SW NW Section 36-16-14w, Barton County, was rigging up rotary. Derby Oil & Gas Co. and Cory Drilling Co. No. 1 Jones, C E half NE NW Section 7-22-1w, south of the Graber pool in Harvey County, was a location. Spurrier & Bruce No. 1 Cary, NE NW NW Section 30-18-8w, an old wildcat in Rice



Mid-Continent Map Co., Wichita

Work has started at H. B. Garden No. 1 Ackley, Section 17-22-6w, wildcat northwest of Hutchinson in Reno County

County, was being deepened from 1,530 feet. Panhandle Eastern No. 1 Joyce, C SE Section 36-30-37w, was location for a wildcat in the Hugoton gas area of Grant County.

Barton County

Three producers were completed in the Barton County sector of the Trapp field. Shell Petroleum Corp. No. 5 Hoffman C, SE cor. Section 1-16-14w, found Arbuckle lime at 3,348 feet, total depth 3,360 feet, pumped 283 bbls. of oil in three hours and made potential of 1,799 bbls. of 39-gravity oil, with 20 bbls. of water.

Indian Territory Illuminating Oil Co. No. 5 Hoffman, SE SE NE Section 1-16-14w, pumped 518 bbls. of oil in eight hours and was rated potentially at 1,553 bbls. Top of Arbuckle lime was 3,308 feet, total depth 3,322 feet.

Texas Co. No. 7 Hoffman, SW SW NW Section 6-16-13w, found Arbuckle zone at 3,321 feet, was bottomed at 3,337 feet, was acidized, pumped 389 bbls. of oil in eight hours and made potential of 1,167 bbls.

In the Barton County sector of the Silica field, Stanolind Oil & Gas Co. No. 11 Panning, CSL S half SE Section 2-20-11w, had Arbuckle lime at 3,267-75 feet, total depth, pumped 354 bbls. of 43-gravity oil the first four hours, 338 bbls. the next four hours and made potential of 2,001 bbls.

Same company's No. 9 Pauline Kowalsky, CSL S half NE Section 11-20-11w, was acidized, pumped 351 bbls. of oil the first four hours, 321 bbls. the next four hours and earned potential rating of 1,929 bbls. It had Arbuckle lime at 3,279-86 feet, total depth.

Bruce Oil, Inc., No. 1 Linser, SW SW SE Section 3-17-13w, an old well, was deepened from 3,368 feet to 3,376 feet, acidized and recompleted for potential of 2,724 bbls. of oil.

New work in Barton County: Cities Service Oil Co. No. 2 Bauman, C W half W half SW Section 6-16-13w, moving in material; Shell Petroleum Corp. No. 9 Schneider, SW NW NW Section 1-16-14w, location; Spencer & Yarnell No. 8 Patzner A, SE cor. Section 36-17-11w, rigging up standard tools; Stanolind Oil & Gas Co. No. 17 Fred Panning, C N half S half NE Section 2-20-11w, set surface casing; same operator's No. 13 W. M. Panning, C N half S half SE Section 2-20-11w, spudded; same operator's No. 10 Kowalsky, C N half N half NE Section 11-20-11w, rigging up rotary; same company's No. 11 Kowalsky, C N half S half NE Section 11-20-11w, building rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ending October 8, and for the preceding week, was as follows:

	Barrels	
	Oct. 8	Oct. 1
Oxford City	1,150	1,200
Burrton	9,525	9,475
Ritz-Canton	4,200	4,450
Graber	2,975	3,025
Hollow-Nikkel	2,975	3,025
Lerado	900	975
Voshell	1,925	1,950
Wellington	2,650	2,600
Ellsworth County:		
Lorraine	1,950	2,025
Other pools	1,250	1,295
Rice-Barton counties:		
Bloomer	1,800	1,850
Chase	3,975	4,025
Geneseo	3,050	3,100
Raymond	975	1,000
Silica	10,875	10,975
South Silica	2,275	2,450
Keesling	825	575
Wherry	3,425	3,500
Miscellaneous Barton	6,500	6,515
Miscellaneous Rice	4,000	4,025
Russell County:		
Fairport	1,900	1,910
Gorham	1,700	1,710
Russell	1,350	1,395
Sullivan	4,675	4,670
Trapp	6,225	6,230
Miscellaneous Russell	5,625	6,850
Sedgwick County:		
Valley Center	950	955
Miscellaneous	3,000	2,850
Ellis County:		
Bemis	4,875	5,000
Miscellaneous	2,775	2,805
Kingman County	675	695
Stafford County	4,550	4,530
Greenwood County	9,750	9,800
Butler County	16,875	17,000
Other fields	19,575	24,940
Total Kansas	154,700	159,375

Stafford County

Another large Misener sand producer was completed in the Zenith pool, Stafford County, at Pure Oil Co. No. 8 Krey, SE SW SE Section 14-24-11w. It found sand at 3,805 feet, was bottomed at 3,830 feet, and flowed 316 bbls. of 42-gravity oil in the first 2 hours and 30 minutes. Gas gauged 1,000,000 feet. It later was shot and made potential of 2,385 bbls. of oil.

In the Richardson area, Republic Natural Gas Co. No. 1 Hart, NW SW SE Section 20-22-11w, had Arbuckle lime at 3,619 feet, total depth 3,629 feet, was acidized and completed for 75 bbls. of 43-gravity oil daily.

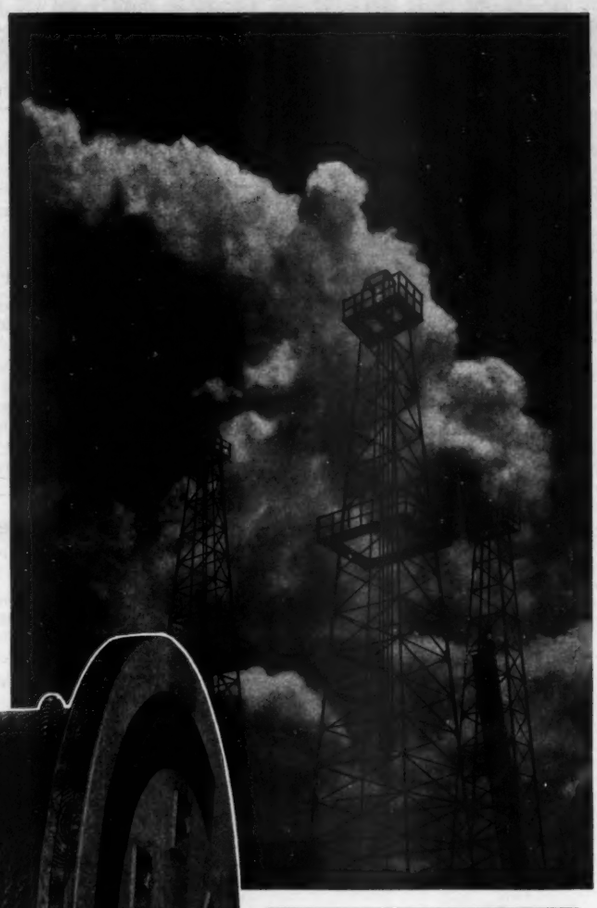
Magnolia Petroleum Co. No. 2 Gates, SW NW NW Section 35-21-13w, Gates pool, topped Arbuckle lime at

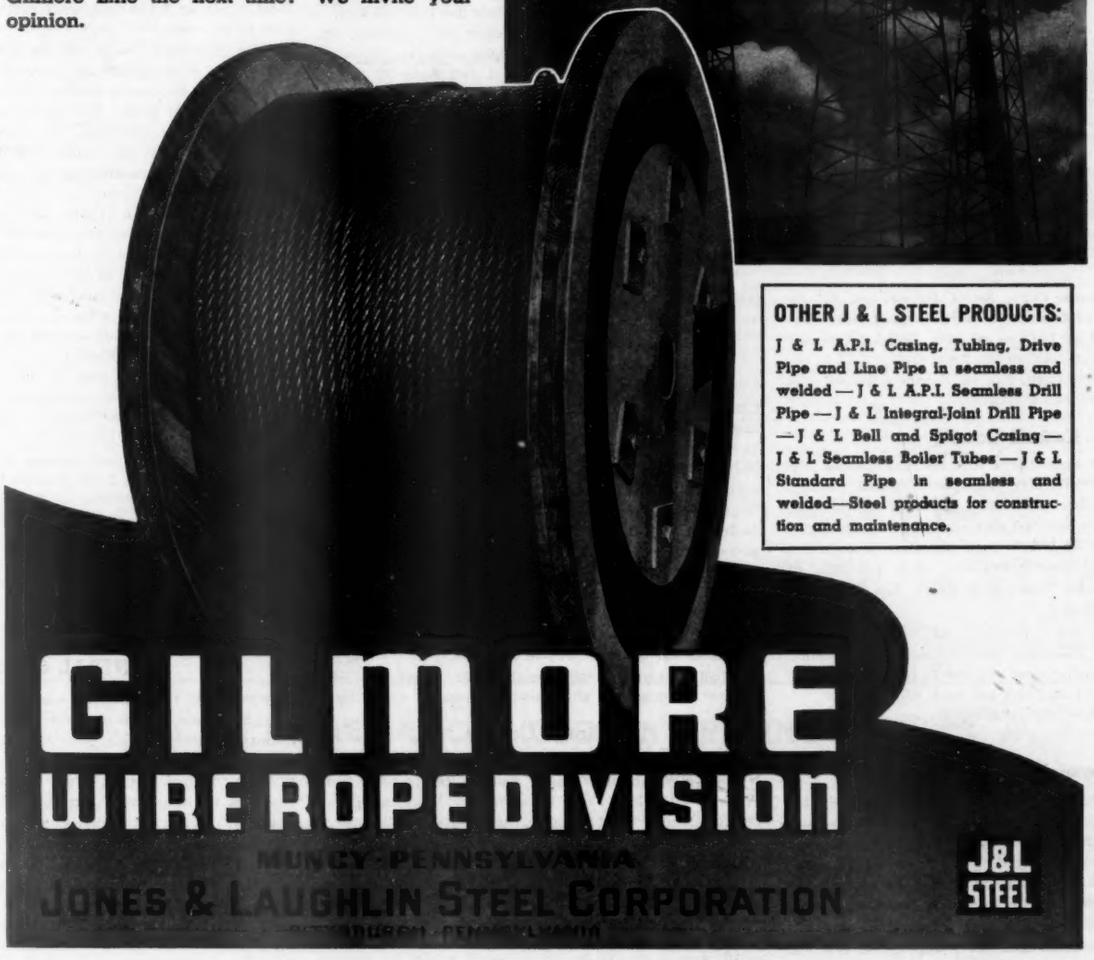
Every operator in the Oil Field likes a line that performs perfectly and keeps on performing for a longer period.

The new Gilmore Plant was equipped with one particular thing in mind — that of making a non-rotating line that will give perfect and lasting performance . . . so we want you users of this type of line to give us a chance to put a happy smile upon your face with a Gilmore Non-rotating line for your rotary rig.

Now occasionally you run into Salt Water and bad going. That's when you need Gilmore precision lines. They have no interstices . . . all strands are closed perfectly and with utmost precision.

Nearly all other manufacturers paint one of the strands of their Wire Lines of highest Tensile Strength. We don't . . . because we cannot lubricate a strand and paint it. Neither can anyone else. We think you would prefer lubrication instead of paint . . . so do we. There are many other reasons worth investigating . . . wont you let us replace your line with a Gilmore Line the next time? We invite your opinion.





OTHER J & L STEEL PRODUCTS:

J & L A.P.I. Casing, Tubing, Drive Pipe and Line Pipe in seamless and welded — J & L A.P.I. Seamless Drill Pipe — J & L Integral-Joint Drill Pipe — J & L Bell and Spigot Casing — J & L Seamless Boiler Tubes — J & L Standard Pipe in seamless and welded—Steel products for construction and maintenance.

GILMORE
WIRE ROPE DIVISION

MUNCY-PENNSYLVANIA

JONES & LAUGHLIN STEEL CORPORATION

J&L STEEL

FRICK-REID SUPPLY CORPORATION, DISTRIBUTORS

PITTSBURGH — TULSA Branches in Old and New Fields

3,700 feet, total depth 3,730 feet, sulfur water intruded and it was abandoned.

Three new operations in Stafford County were reported. E. H. Moore, Inc., No. 6 O'Haver, NE SW SW Section 13-24-11w, was building rig. Stanolind Oil & Gas Co. and others No. 7 W. C. Volker, C S half N half NE Section 23-24-11w, was a cellar. Same operators' No. 5 M. Volker A, C N half S half NE Section 23-24-11w, was a cellar.

Rice County

Texas Co. No. 11 Kleile, NE NE SW Section 34-19-10w, Silica field, Rice County, found Arbuckle lime at 3,308-19 feet, total depth, pumped 400 bbls. of 43-gravity oil in eight hours and made potential of 1,200 bbls. of oil, with 300 bbls. of water.

Transwestern Oil Co. and others No. 1 Habiger C SW SW NE Section 8-18-10w, Heinz pool, pumped 51 bbls. of oil the first four hours, 31 bbls. the next four hours and made potential of 186 bbls., cutting one-half of 1 per cent water. Production was from Arbuckle lime topped at 3,256 feet, total depth 3,267 feet.

Shell Petroleum Corp. No. 10 Zajic, SW SW NE Section 13-18-8w, was a location. Stanolind Oil & Gas Co. No. 1 Heine, SE cor. Section 21-19-10w, was building rig.

Ellsworth County

A large producer was completed in the Ellsworth County part of the Stumps-Habiger district. It was Skelly Oil Co. No. 3 Moran, SE NE SE Section 31-17-10w. Lansing lime was topped at 2,940 feet and the hole was bottomed at 3,014 feet. It flowed 300 bbls. of oil in the first five and one-half hours, with 500,000 feet of gas. After acidizing with 6,000 gallons, it flowed 575 bbls. of oil the first four hours, 643 bbls. the next four hours and made potential of 3,447 bbls.

Cities Service Oil Co. and others No. 4 Schroeder A, C E half E half SW Section 29-17-9w, Schroeder pool, topped Arbuckle lime at 3,231 feet, total depth 3,237 feet, pumped 666 bbls. of oil in eight hours and made potential of 1,997 bbls.

Ellis County

Shell Petroleum Corp. completed another good producer in the Bemis field, Ellis County, at No. 12 Rumsey, SW SE NW Section 23-11-17w. It had Arbuckle lime at 3,370-90 feet, total depth, pumped 1,108 bbls. of 35-gravity oil in eight hours and made potential of 3,321 bbls.

Darby Petroleum Corp. No. 1 Henderson, SE SE NW Section 7-11-17w, South Burnett pool, was estimated good for 2,000 bbls. of oil daily. Top of Arbuckle lime was 3,431 feet, total depth 3,436 feet.

Shell Petroleum Corp. No. 16 Rumsey, SE SE NW Section 23-11-17w, was a location.

Russell County

R. H. Shields and others No. 4 Gross, SE SE NE Section 31-13-12w, Bunker Hill pool, Russell County, topped Lansing lime at 2,976 feet, total depth 3,070 feet, plugged back to 3,000 feet and was shot and acidized. It pumped 53 bbls. of oil the first four hours, 44 bbls. the next four hours and made potential of 263 bbls. of oil, with 15 per cent water. Gravity of the oil was 36 degrees.

Signal Oil Co. No. 1 Bangart, NE NW NW Section 2-15-14w, Smoky Hill pool, was completed as a 93-bbl. pumper from Lansing lime at 2,949-75 feet. It was bottomed at 2,990 feet and plugged back to 2,975 feet.

Coralena Oil Co. No. 4 Sellens Estate, NW NW SE Section 29-15-13w, was a rig.

Sedgwick-Butler Counties

Prunty Production Co. No. 1 Westerfield A, SE SE SW Section 16-25-1e, Goodrich pool, Sedgwick County, topped chat at 2,996 feet, Misener dolomite 3,336-38 feet, total depth, and plugged back to 3,050 feet. After acidizing and shooting, it pumped 146 bbls. of oil the first four hours, 90 bbls. the next four hours, and made potential of 546 bbls.

Magnolia Petroleum Co. No. 1 Jabes, NE NW SE Section 8-27-2e, North Eastboro pool, Sedgwick County, was dry and abandoned at 3,306 feet, total depth.

National Refining Co. No. 2 Pray, NW SW SW Section 31-27-3e, South Andover pool, Butler County, had Simpson pay at 3,110 feet, total depth 3,118 feet, and made potential of 220 bbls. of oil. It was shot with 10 quarts at 3,111-17 feet.

Simpson Oil Co. and others No. 3 Steinhoff, NW NE NE Section 28-29-6, Butler County, had Kansas City lime at 2,010 feet, total depth 2,214 feet, and pumped 30 bbls. of oil and 50 bbls. of water daily.

Greenwood-Woodson Counties

Ward McGinnis No. 1 Dehlinger, SW SE SE Section 3-24-13, Greenwood County, had Mississippi lime at 1,642-53 feet, total depth, was acidized and pumped 9 bbls. of oil and 25 bbls. of water daily.

Sinclair Prairie Oil Co. No. 9 McClaskey, SE SE NW Section 29-23-14, an old Woodson County well, was deepened from 1,745 feet to Arbuckle lime at 2,093 feet, total depth 2,252 feet, and was recompleted for a water disposal well.

New work in Greenwood County: Braden and others No. 1-A Dalton, C SE NE Section 11-24-12, drilling below 1,015 feet; Shull Drilling Co. No. 3 Erickson, NW NE SE Section 17-24-13, rigging up machine; Whittaker No. 1 Pottorff, SW SW NW Section 16-28-11, rigging up machine.

Additional First Reports

In McPherson County Miller and others No. 1-A Decker, NW NW NE Section 2-20-2w, rigging up standard tools.

In Sumner County E. B. Shawver No. 1 Ludwig, SE SE NE Section 29-31-1w, rigging up rotary.

In Rooks County Vickers Petroleum Co. No. 3 Luhman, NW NW SE Section 11-9-16w, rig.

In Harvey County Bennett & Wilhelm No. 3 Gouldner, NW NW SE Section 19-23-3w, building rig.

Illinois Fields

(Continued from Page 71)

In Franklin County Eason Oil Co. No. 1 Orient Mine, in Section 36-6s-2e, drilling at 2,130 feet; North American Engineering Co. of Peoria, Ill., No. 1 Thakton, SE cor. NE SW Section 33-8s-7e, shut down at 335 feet.

Jefferson County: Doctor Moore No. 1 Moore, SE NE NW Section 16-3s-5e, total depth 2,025 feet, showing of oil; Benedum-Trees, Inc., No. 1 Jefferson Oil & Gas Co., C NW NE Section 16-4s-2e, McClosky at 2,745-53 feet, set 5½-inch casing at 2,725 feet, St. Louis top 2,815 feet, total depth 2,955 feet; cemented back to 2,755 feet, drilling plug.

Randolph County: Arnes Drilling Co. No. 1 Nicholson, NW SE NW Section 12-5s-9w, Aux Vases at 230 feet, Ste. Genevieve lime 314 feet, shut down at 460 feet; Badger Oil Co. No. 1 Schroeder, SE NW NW Section 27-6s-6w, shut down at 713 feet.

Edwards County: Leach Brothers No. 1 Lee, SW NE SE Section 11-1s-10e, drilling at 3,526 feet.

Fayette Outposts

In Fayette County Longoria No. 1 Brasch, NE NE SW Section 1-5n-1e, was drilling at 600 feet. Hurricane Creek Oil & Gas Co. No. 1 Eddie Rickard, C NW NE Section 15-6n-1w, set 10-inch casing at 500 feet, drilling at 955 feet in a hole full of water. Putnam and others No. 1 I. V. Farmer, C SE SE Section 35-6n-1w, set 10-inch casing at 150 feet and was drilling at 320 feet. F. H. Brown & Lacy No. 1 Albright, SE NW NE Section 19-6n-3e, set 10¾-inch casing at 84 feet and was drilling at 1,025 feet. Mamouth & Murphy No. 1 Cooper Neal, C SW SE NE Section 32-6n-3e, was drilling at 980 feet. L. C. Simmell and others No. 1 Workman Estate, SW cor. SE Section 26-7n-2e, had derrick up. Ruwaldt & Johnson No. 1, 320 feet from north and 1,305 feet from east line NE quarter Section 28-7n-3e, was drilling at 150 feet. Robert Garland No. 1 Miller, SE cor. SE SW Section 34-9n-2e, was shut down for repairs at 280 feet.

Clinton County

In Clinton County Farrelly and others No. 1 Berman, NW SW NW Section 30-1n-3w, was drilling at 1,100 feet. Watkins & Wright No. 1 Wise, 75 feet from north and 600 feet from west lines of SE quarter Section 24-1n-3w, was drilling at 1,700 feet. Sappington and others No. 1 Higleman, SE NE NW Section 22-3n-3w, set 6-inch casing at 872 feet and was drilling at 1,287 feet. White and others No. 1 Wilten, 990 feet from east and 330 feet from south lines of NW quarter Section 19-3n-2w, was preparing to spud.

Marion County

In Marion County Palmer (formerly reported Anna Bell Oil Co.) No. 1 Adams, NE SW NW Section 3-1n-1e, had Cypress sand at 1,600 feet and was at a total depth of 1,632 feet. Hansky No. 1 Yoos, NW NE NE Section 6-1n-1e, was shut down at 1,000 feet. Gardenshire No. 1 Mercer, SW NE SE Section 12-1n-1e, had Bethel sand at 2,020 feet, lime at 2,005-12 feet, shale at 2,012-20 feet, total depth 2,050 feet, in sand, and the crew was plugging off water. Superior Oil Co. of California No. 1 Luttrell, SW SE SE Section 4-1n-2e, with McClosky lime at 2,087-95 feet, set 7½-inch casing at 2,077 feet and drilled to 2,152 feet. Casing was perforated with 40 shots at 1,858-96 feet and 2½-inch tubing run to 1,869 feet. The hole was swabbed dry, but filled up 1,730 feet with fluid, 60 per cent oil, the remainder sediment and water. Put on the pump, the well made 17 bbls. in three hours and pumped off. The crew was testing. Duncan Brothers No. 1 Myers, 495 bbls. from north and 660 feet from west lines SW NW Section 34-1n-2e, had porous and saturated McClosky lime at 2,178-82 feet. The hole was drilled to 2,199 feet, in hard lime, where a drill-stem test was about to be made. J. Bachman No. 1 Cattani, NW NE SE Section 10-1n-3e, topped the Tar Springs formation at 2,075 feet and was at a total depth of 2,133 feet. Coyer No. 1 Mulvaney, SE NE SE Section 6-2n-4e, was rigging up rotary. Newman & Brooks No. 1 Walter Neilson, C NE SW NW Section 20-4n-2e, was drilling at 1,425 feet. Wigico Oil & Gas Co. No. 1-A A. D. Nichols, SW SW NW SW Section 22-4n-2e, was running casing, total depth 1,415 feet.

In Jefferson County Oil Royalties No. 1 Suggs-Meeker, SW NW NW Section 11-2s-1e, underreamed 6-inch casing to 1,440 feet, total depth 1,452 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Oct. 10.—Four oil wells, six gassers and one dry hole were completed in the past week's report of field operations in Eastern Kentucky.

Warfield Gas Co. completed No. 4810 Mary B. Runyon on Toler Branch, in Floyd County, at a total depth of 1,510 feet, in Maxon sand. It gauged 3,834 feet of gas daily. The same company completed No. 4782 John D. Cornett on Muddy Branch, in Martin County, at a total depth of 1,168 feet with production of 1,565,000 feet of gas daily.

The Virginian Gas & Oil Co. drilled a dry hole in No. V-1266 Federal Gas, Oil & Coal Co. land on Coldwater Fork, in Martin County, at total depth of 1,578 feet, in Maxon sand. The same company completed No. 4, V-1268, on the firm's own land on Big Crooked, in Martin County, at a total depth of 1,497 feet, in Maxon sand, with a daily production of 353,000 feet of gas.

Operator Diedrich reports the completion of No. 6 Amy Pauly (Stepp) on Big Crooked, in Martin County, at total depth of 1,449½ feet, in Maxon sand, with a daily flow of 10 bbls. of oil.

Fred Williams has completed No. 1 Stanley Heirs on Mare Creek, in Floyd County, at a total depth of 800 feet, in shale, with a flow of 800,000 feet of gas daily.

Kentucky-West Virginia Gas Co. completed No. 574 John & Benjamin Sellards on Levisa Fork, in Floyd County, at a total depth of 1,026 feet and is testing gas. The same company completed No. 575 Henry C. Slone, in Floyd County, at a total depth of 2,720 feet in white slate, but production information is not yet available.

R. R. Snowden No. 1 Sarah Snowden on Billies Fork, in the Big Sinking district of Lee County, total depth 930 feet, is a 2-bbl. well.

South Penn Oil Co. completed No. 26 Albert J. McCoy on South Fork, in the district of that name in Powell County. The well is producing 3 bbls. of oil daily

C. M. Nicholas No. 1 R. B. Fannin, in Elliott County, was good for 5 bbls. per day.

CENTRAL OHIO

FINDLAY, Ohio, Oct. 10.—In the central Ohio area, oil completions struck a new low for the year. Medina County yields the only shallow oil producer for the week. In Chatham Township, Curtis & Eaken No. 19 William Clifford, Lot 22, Tract 16, made 12 bbls. of oil the first 24 hours after a shot in Berea sand at 324-424 feet. Two wells which give promise of being fair producers in the Clinton sand have been drilled by the Pure Oil Co. in Jackson Township, Knox County. The No. 3 Elmer Blue in Section 10, made 7 bbls. of oil and 100,000 feet of gas, and No. 1 William Clark, Section 11, made 8 bbls. of oil and 250,000 feet of gas. The wells will be given a shot later.

Lima Field

The deep test in the Gilboa field, Putnam County, proved a disappointment so far as the Green sand is concerned. Brown and others found water in the Green sand at 1,992 feet, in No. 4 L. U. McCullough, in Section 22. The hole was plugged back to the oil pay in the Trenton lime at 1,350-58 feet and shot for a 10-bbl. oil producer.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Hancock-Bush, No. 3 Bradley, Santa Maria, S. Barb.	26-10-34	5,394	flow 580 b.d.
Hancock-Bush, No. 4 Bradley, Santa Maria, S. Barb.	26-10-34	2,167	sd. sh. drlg.
Union Oil, No. 4 Vicente, Santa Maria, S. Barbara ..	21-10-34	5,153	pump. 415 b.d.
Union Oil, No. 12 Coast, Santa Maria, Santa Barbara	26- 9-34	3,374	will deepen
O'Donnell, J. E., No. 1 Helen, Lompoc, S. Barbara ..	8- 7-33	4,760	sd. sh. drlg.
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	3,035	idle
Barnsdall Oil, No. 1 Tezzoni, Gato Ridge, S. Barbara	15- 8-32	3,570	br. sh. drlg.
General Pet., No. 1 Laguna, Los Alamos, S. Barbara	6- 7-30	1,186	sd. sh. drlg.
Oceanic Oil, No. 1 Lowe, Santa Barb. Sesa, S. Barb.	28- 4-27	1,803	sd. sh. drlg.
Ventura Drlg., No. 1, Ojai, Ventura	10- 3-23	818	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,799	sd. sh. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	4,030	pump. 240 b.d.
Merchants Pet., No. 1, Sespe, Ventura	1- 4-20	1,196	sd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	603	sd. sh. drlg.
Section 20 Oil, No. 1 Sespe, Ventura	20- 5-19	2,297	sd. sh. drlg.
McKinnis, C. R., No. 1, Hopper Canyon, Ventura	14- 4-19	970	sd. sh. drlg.
Texas Co., No. 135 Shiells, Shiells Canyon, Ventura	4- 3-19	3,560	O.S. drlg.
Continental Oil, No. 9 Grubb, San Miguelito, Ventura	24- 3-24	7,000	flow 2,140 b.d.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	6,050	gr. sd. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	6,632	O.S. drlg.
C. C. M. Oil, No. 23-B Hobson, Rincon, Ventura	8- 3-24	3,280	gr. sd. drlg.
General Pet., No. 3 Tomson, Rincon, Ventura	8- 3-24	3,453	redrlg. 1,660
Richfield Oil, No 5-F State, Rincon, Ventura	17- 3-24	3,756	cleaning out
Tide Water A. O., No. 36 V.L.W., Vent. Ave., Ventura	26- 3-23	2,990	sd. sh. drlg.
Tide Water A. O., No. 77 Lloyd, Vent. Ave., Ventura	27- 3-23	5,117	will deepen
Tide Water A. O., No. 111 Lloyd, Vent. Ave., Ventura	27- 3-23	10,260	fish. liner
Tide Water A. O., No. 126 Lloyd, Ventura Ave. Vent.	27- 3-23	5,180	sd. sh. drlg.
Tide Water A. O., No. 127 Lloyd, Ventura Ave., Vent.	27- 3-23	9,901	flow 1,870 b.d.
Tide Water A. O., No. 128 Lloyd, Ventura Ave., Vent.	27- 3-23	1,971	sd. sh. drlg.
Tide Water A. O., No. 134 Lloyd, Ventura Ave., Vent.	27- 3-23	8,295	flow water
Tide Water A. O., No. 7 Hartman, Vent. Ave., Ventura	22- 3-23	9,005	sd. sh. drlg.
Tide Water A. O., No. 11 McGonigle, Vent. Ave., Vent.	23- 3-23	10,240	deepening
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	8,670	sd. sh. drlg.
Shell Oil, No. 30 Edison, Ventura Ave., Ventura	20- 3-23	7,485	sd. sh. drlg.
General Pet., No. 16 Barnard, Ventura Ave., Ventura	21- 3-23	5,449	cleaning out
Lloyd Corp., No. 2 Dabney-Lloyd, Ventura Ave., Vent.	23- 3-23	6,298	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	1,198	O.S. drlg.
Cal. Lands, Inc., No. 1 Occidental, Lost Hills, Kern	24-26-20	5,902	br. sh. drlg.
Belridge Oil, No. 27-4, North Belridge, Kern	27-27-20	3,791	sd. sh. drlg.
Belridge Oil, No. 27-13, North Belridge, Kern	27-27-20	8,096	O.S. drlg.
Belridge Oil, No. 27-19, North Belridge, Kern	27-27-20	6,408	br. sh. drlg.
Belridge Oil, No. 27-31, North Belridge, Kern	27-27-20	6,323	br. sh. drlg.
Tide Water A. O., No. 22-3, North Belridge, Kern	22-27-20	7,540	hd. sh. drlg.
Tide Water A. O., No. 22, North Belridge, Kern	21-27-20	5,260	hd. sh. drlg.
Crestmont Oil, No. 5 Staley, Round Mountain, Kern	8-28-29	1,604	redrlg. 1,510
Shell Oil, No. 4 Olcese, Round Mountain, Kern	21-28-29	1,689	O.S. drlg.
Honolulu Oil, No. 59 Twenty, Round Mountain, Kern	20-28-29	1,960	pump. 130 b.d.
Honolulu Oil, No. 74 Eighteen, Round Mountain, Kern	18-28-29	1,820	sd. sh. drlg.
Green Bay, No. 1 Conry, Round Mountain, Kern	30-28-29	971	sd. sh. drlg.
Grizzly Bear Oil, No. 1 Kelly, Round Mountain, Kern	6-28-29	1,396	sd. sh. drlg.
Fuhrman, A., No. 13 Kernco, Kern River, Kern	28-28-28	252	sd. sh. drlg.
Morrison, C. S., No. 14 Kernco, Kern River, Kern	2-29-28	360	idle
Helm & Smith No. 8-A Kernco, Kern River, Kern	34-28-28	670	pump 15 b.d.
Helm & Smith No. 9-A Kernco, Kern River, Kern	34-28-28	237	sd. sh. drlg.
Little & Gillstrap, No. 1 Keating, Mount Poso, Kern	20-27-27	2,047	O.S. drlg.
Ring Oil, No. 7 Bowles, Mount Poso, Kern	29-26-28	1,740	pump 215 b.d.
Union Oil, No. 13 Tribe, Mount Poso, Kern	28-27-28	1,874	sd. sh. drlg.
Pioneer Petrol, No. 1 Buckner, Mount Poso, Kern	20-26-28	993	sd. sh. drlg.
Richfield Oil, No. 1, Union Avenue, Kern	5-30-28	6,170	sd. sh. drlg.
Western Gulf Oil, No. 39-B, KCL, Fruitvale, Kern	14-29-27	3,896	O.S. drlg.
Meridian Oil, No. 5 fee, Fruitvale, Kern	23-29-27	3,666	swabbing
Texas Co., No. 1 Lowe, Fruitvale, Kern Co.	7-29-27	10,122	redrlg. 9,720
Greer, P. H., No. 2 Perrell, Mountain View, Kern	9-31-29	6,638	redrlg. 6,325
Hogan Pet., No. 10 Wharton, Mountain View, Kern	32-30-29	1,892	sd. sh. drlg.
Renner, G. E., No. 2 R.H.L., Sivert, Kern	27-30-30	1,590	sd. sh. drlg.
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	13,601	sd. sh. drlg.
Continental Oil, No. 1, KCL, Seaboard, Wasco, Kern	26-27-24	12,960	hd. sd. drlg.
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-27-24	13,054	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	12,360	sd. sh. drlg.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	5,301	sd. sh. drlg.
Superior Oil, No. 2 Ruhl, Rio Bravo, Kern	1-29-25	11,060	sd. sh. drlg.
Superior Oil, No. 3 Ruhl, Rio Bravo, Kern	1-29-25	7,293	sd. sh. drlg.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	14,018	idle
Union Oil, No. 2-34, KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 10,740
Union Oil, No. 5-34, KCL, Rio Bravo, Kern	34-28-25	10,998	sd. sh. drlg.
Union Oil, No. 6-34, KCL, Rio Bravo, Kern	34-28-25	9,460	sd. sh. drlg.
Getty Oil, No. 3 Ramsey, Rio Bravo, Kern	35-28-25	9,280	sd. sh. drlg.
General Pet., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	11,510	flow 3,925 b.d.
General Pet., No. 4 Van Ness, Rio Bravo, Kern	2-29-25	8,691	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	10,990	sd. sh. drlg.
Standard Oil, No. 1 Eirich, Greeley, Kern	20-29-26	5,994	sd. sh. drlg.
Superior Oil, No. 1 Krause, Greeley, Kern	21-29-26	11,360	hd. sh. drlg.
Continental Oil, No. 1-E, KCL, Stevens, Kern	17-30-26	8,574	redrlg. 7,430
Shell Oil, No. 83-25-A, KCL, Ten Section, Kern	25-30-25	8,075	O.S. drlg.
Shell Oil, No. 47-20-B, KCL, Ten Section, Kern	20-30-26	7,792	sd. sh. drlg.
Shell Oil, No. 67-20-B, KCL, Ten Section, Kern	20-30-26	8,210	flow 97 b.d.
Shell Oil, No. 43-14-A, KCL, Canal, Kern	14-30-25	7,597	sd. sh. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	6,683	sd. sh. drlg.
Ohio Oil, No. 8-E, KCL, Canal, Kern	14-30-25	8,292	flow 1,720 b.d.
Standard Oil, No. 1 Rio Bravo fee, Canal, Kern	12-30-25	7,864	redrlg. 7,698
Richfield Oil, No. 1, KCL, Tupman, Kern Co.	32-30-25	8,125	sd. sh. drlg.
Ohio Oil, No. 1-F, KCL, Coles Levee, Kern	10-31-25	8,576	sd. sh. drlg.
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	1,860	sd. sh. drlg.
Gibson Oil, No. 3 Blanck, Midway-Sunset, Kern	6-11-23	2,367	P.B. 2,325
Lilly Oil, No. 3 Lilly, Midway-Sunset, Kern	36-32-23	1,200	O.S. drlg.
Magnuson, C. A., No. 1 Midway, Midway-Sunset, Kern	19-31-23	3,950	gr. sd. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	7,270	sd. sh. drlg.
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	5,250	hd. sd. drlg.
Pierce, Cyrus, No. 1 Shorb, Panoche, Fresno	16-14-12	863	sd. sh. drlg.
Pure Oil, No. 1, SPL, Huron, Fresno	31-18-17	12,336	may abd.
Magnet Oil, No. 2 Fearon, Fresno	18-19-15	4,835	may abd.
Tide Water A. O., No. 1-F, North Coalinga, Fresno	1-19-15	5,260	sd. sh. drlg.
Pet. Sec. Co., No. 88-7-F, East Coalinga, Fresno	7-20-16	1,983	sd. sh. drlg.
Pet. Sec. Co., No. 31-18-F, East Coalinga, Fresno	18-20-16	4,630	sd. sh. drlg.
Goetz, F., Co., No. 1, East Coalinga, Fresno	10-20-15	6,716	P.B. 6,370
Standard Oil, No. 82-13 fee, East Coalinga, Fresno	13-20-15	6,842	O.S. drlg.
Texas Co., No. 19 Mohawk, East Coalinga, Fresno	12-20-15	4,224	bailed water
Universal Cons'd. Oil, No. 1, East Coalinga, Fresno	12-20-15	7,115	liner bad
Tide Water A. O., No. 66 Guardian, E. Coalinga, Fres.	12-20-15	6,691	hd. sd. drlg.
Superior Oil, No. 1 fee, East Coalinga, Fresno	7-20-16	5,793	sd. sh. drlg.
Shell Oil, No. 21 Coast Range, East Coalinga, Fresno	17-19-15	1,590	sd. sh. drlg.
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	3,308	gr. sh. drlg.
Stuart Oil, No. 1 Alcalde, Alcalde, Fresno	12-21-14	347	sd. sh. drlg.
Union Oil, No. 4 King, Kettleman North, Fresno	29-21-17	8,520	cleaning out
Superior Oil, No. 4-H, Kettleman North, Fresno	29-21-17	8,600	redrlg. 7,790
K.N.D.A., No. 27-8-Q, Kettleman North, Kings	6-22-18	8,418	hd. sd. drlg.
K.N.D.A., No. 58-8-Q, Kettleman North, Kings	8-22-18	8,285	hd. sd. drlg.
K.N.D.A., No. 36-16-Q, Kettleman North, Kings	16-22-18	5,750	br. sh. drlg.
K.N.D.A., No. 38-16-Q, Kettleman North, Kings	16-22-18	8,140	hd. sd. drlg.
K.N.D.A., No. 43-20-Q, Kettleman North, Kings	20-22-18	8,914	flow 135 b.d.
K.N.D.A., No. 65-20-Q, Kettleman North, Kings	20-22-18	1,985	sd. sh. drlg.
K.N.D.A., No. 27-22-Q, Kettleman North, Kings	22-22-18	8,670	recmtd.
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	8,020	sd. sh. drlg.
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	6,584	sd. sh. drlg.
Caminol Co., No. 3 Amalgamated, Allensworth, Tulare	29-24-24	9,507	hd. sh. drlg.
Texas Co., No. 1 Lewis, Kings City, Monterey	13-19- 5	3,497	br. sh. drlg.
Tannehill, L. B., No. 1 Reliz, Kings City, Monterey	36-20- 8	502	fish D.P.
Temblor Range Oil, No. 1 Temblor Range, S. L. Obispo	22-31-22	3,090	sd. sh. drlg.
Loma Grande Oil, No. 1 Edna, San Luis Obispo	28-31-13	1,497	cleaning out
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	3,750	cleaning out
Ohio Oil, No. 2 Willard, Willows, Glenn	18-20- 2	2,020	sd. sh. drlg.
Amerada Pet., No. 1 Calif. Lands, Colusa, Colusa	34-16- 1	7,266	br. sh. drlg.
Wilshire Oil, No. 2 Crowell, Half Moon Bay, S. Mateo	20- 6- 5	762	sd. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4- 1	4,698	sd. sh. drlg.
Orestimba Oil, No. 1 S. N., Newman, Stanislaus	12- 7- 7	751	sd. sh. drlg.
Barnhart & Morrow, No. 1 Arnold, Berenda, Madera	22-10-17	2,346	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

KANSAS

Week Ending October 8 (Descriptions are East unless marked otherwise)

Barton County

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. Rng. csg. 2,767 ft.
Continental and Sinclair-Prairie No. 1 Pichner, SE NW Sec. 23-16-11w. Drlg. 3,410 ft.
Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Rng. csg. 2,195 ft.
I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. S.D. 575 ft.

Butler County

Fred Phillips No. 1 Hanshaw, NE NE SE Sec. 32-27-3. Drlg. 3,075 ft.
Soloman & Alexander No. 1 Sawyer, SW NW SW Sec. 2-28-7. S.D. 175 ft.

Cowley County

Barnsdall Oil Co. No. 1 Elliott, NE cor. Sec. 5-31-5. Drlg. 3,165 ft.
Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Drlg. 3,100 ft.
Ben Gralapp and Continental No. 1 Community, NW Sec. 23-32-5. Drlg. 1,280 ft.

Ellsworth County

Continental Oil Co. No. 1 Gray, SW SE SE Sec. 26-17-8w. Rng. csg. 290 ft.

Finney County

Atlantic Ref. Co. No. 1 Nann O.W.D.D., C SE NE Sec. 21-21-34w. O.T.D. 4,658 ft.; drlg. 4,706 ft.

Greenwood County

Z. Dunlap et al No. 1 Warren, NW NW SW Sec. 4-28-10. S.D. 2,000 ft.

Harvey County

Lanahan Drlg. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE Sec. 10-27-10w. T.D. 4,529 ft.; P.B. 4,086 ft.; swbg. 4 B.O.P.H.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. Drlg. 2,605 ft.
Western Kans. O. & R. Co. No. 1 Union, NW NE SW Sec. 18-17-1w. Drlg. 350 ft.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,275 ft.; S.D.

Mead County

Cragin, Reeuscher & Turner No. 1 Adams, NW NW SE Sec. 22-34-30w. T.D. 200 ft.; R.U.R.
Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,350 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Rng. csg. 2,427 ft.; H. F.W.

Pottawatomie County

[illegible] A. Turner No. 1 Unshide, C NE NW Sec. 32-8-9. T.D. 1,150 ft.; S.D.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Reno County

[illegible]. Scherzer No. 1 Krey, SE SW Sec. 19-23-10w. M.I.M.

Rice County

Climac Oil Co. No. 1 Malone, SE SW NW Sec. 36-20-10w. Drlg. 2,350 ft.

Rooks County

Shindhelm & Haynes et al No. 1 Dorr, SE SW Sec. 13-9s-16w. T.D. 3,613 ft.; P.B. 3,350 ft.; top pay 3,336 ft.; pmp. 15 B.O.P.D.; comp.

Russell County

Yankey & Stearnes No. 1 Krog, NW SE NW Sec. 7-15-13w. Drlg. 280 ft.

Saline County

Sullivan & Sidwell No. 1 Erickson, NE NE Sec. 28-16-3w. S.D. 1,800 ft.

Sedgwick County

D. M. Crowe No. 1 Murphy, SW SE Sec. 34-29-1w. Rng. csg. 1,725 ft.
Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. S.D. 2,355 ft.

Stafford County

Atlantic Ref. Co. No. 1 Wise, NW cor. Sec. 13-24-14w. Simp. 4,121 ft.; Arb. 4,173 ft.; P.B. 3,812 ft.; acdz.; pot. 1,494 B.O.
Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. Surf. csg.
Vickers Pet. Co. No. 1 Blue, CWL NW NW Sec. 1-33-2w. Drlg. 3,603 ft.

Thomas County

Ramsey Pet. Co. and John Mabee No. 1 Ryan, C NE SE Sec. 27-8-32w. Drlg. 4,950 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 300 ft.

Woodson County

Fleming et al No. 1 Central Life, SW SW SW Sec. 27-24-15. T.D. 1,560 ft.; S.G. at 1,500 ft.; D.&A.
M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

Texas County

Republic Natl. Gas No. 1 Blackmer, C Sec. 15-6n-15ecm. Drlg. 2,130 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 7,081 ft.
L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,180 ft.; C.O.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW Sec. 2-4s-10e. Arb. 2,843 ft.; S.D. 3,455 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 1,160 ft.; S.D.

Cotton County

Jim Turner et al No. 4 Collins, NE SE NE Sec. 18-4s-10w. Top sd. 1,207 ft.; to core.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. Sec. 35-6s-2w. T.D. 8,185 ft.; abd.

Stephens County

M. J. Mitchell No. 1 Westfall, SE cor Sec. 33-2-4w. Drlg. sh. 1,803 ft.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. T.D. 2,380 ft.; S.D.

OKLAHOMA

Week Ending October 8

NORTHERN OKLAHOMA

Beckham County

Wagner & Stogner No. 1 McGee, NE NE SE sec. 25-8-22w. O.W.D.D.: T.D. 1,029 ft.; est. 5,000,000 ft. gas; comp. as gas well.

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. Drlg. 2,424 ft.; lost cir.

Cleveland County

Big Chief and Gulf No. 1 Stratiger, NW NW SW Sec. 25-9-2w. Drlg. 4,850 ft.

Coal County

Carter et al No. 1 Mote, C E½ SW NW Sec. 19-2-10. Dense 7,205 ft.; drlg. 7,356 ft.

Comanche County

E. N. Eldridge No. 1 Aetna Life, SW SE SW Sec. 2-1-10w. Drlg. 1,160 ft.
Midnite O. & G. Co. No. 1 Howe, NW NW NW Sec. 20-2n-13w. Drlg. 600 ft.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; 1st Wilcox 6,658 ft.; dry; 2nd Wilcox 6,690 ft.; F. 816 B.O. 1st 24 hrs.; 871 2nd 24 hrs. with 10,240,000 ft. gas; S.I.
I.T.I.O. No. 1 Kitchin, C SE SE Sec. 17-22-5w. Miss. 6,113 ft.; Chat 6,625 ft.; Hunton 6,661 ft.; dolo. 6,824 ft.; 1st Wilcox 6,878-90 ft.; 2nd Wilcox 6,934-50 ft., T.D.; D.&A.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e, 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. Drlg. sh.&sd. 3,904 ft.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE Sec. 13-7-8. S.D. at 1,200 ft.
Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. Drlg. 2,055 ft.
Phillips Pet. Co. No. 1 Beeker, NE NW SW Sec. 8-5-10. T.D. 6,283 ft.; P.B. 5,632 ft.; drld. out to 5,639 ft.; swb. 3 B.O.; shot and C.O.

Jackson County

Lippert No. 1 Howard, NE SW NW Sec. 10-3-19w; O.W.D.D. Drlg. 1,421 ft.

Kay County

Louis Blosser No. 1 Rudolph, NE NE SW Sec. 27-29-1w. T.D. 3,536 ft.; S.D. for heavy tools.
Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. C.O. at 420 ft.
E. W. Hamilton No. 1 Riddle, NW cor. Sec. 3-26-4. T.D. 710 ft.; S.D.; reprs.
Tide Water Oil Co. No. 1 Hockman, NW NW NE Sec. 19-28-1. Drlg. 1,965 ft.

Kingfisher County

Burton Pet. Corp. No. 1 Zerger, C SE SW Sec. 5-18-6w. S.D. at 3,510 ft.; lost cores.

Kiowa County

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. S.D. for csg. 400 ft.
Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Lincoln County

Ok-Texas No. 1 Black, SE cor. Sec. 31-16-6. T.D. 3,903 ft.; lost circ.; cmtd. back to 3,882 ft.; W.O.C.

Muskogee County

Garrett No. 1 Fuel, SW SW SW Sec. 22-14-18. T.D. 1,675 ft., sd.; D.&A.

Noble County

H. R. Hollenbach No. 1 Mathews, C SW NW Sec. 9-20-1. Miss. 4,750 ft.; T.D. 4,903 ft.; S.S.O.

Payne County

Continental Oil Co. No. 1 Nonahoe, NW SW Sec. 16-18-2w. W.O.C. at 650 ft.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW Sec. 4-2-15. T.D. 1,040 ft.; S.D.
Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. T.D. 1,300 ft.; M.I. rotary.

Pontotoc County

Jack Lynch et al No. 1-A Parker, SW SW SE Sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rip in csg.; P.B. 4,090 ft., S.D.
H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.
Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,013 ft.; S.D.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. T.D. 4,356 ft.; to set csg.
Geo. L. Pace No. 1 Riley, NE NE SE Sec. 2-9-3. Woodford 4,925 ft.; Wilcox 5,329 ft.; cd. 5,330-37 ft.; S.S.O.; drlg. ahead.

Seminole County

Rogers & Rogers No. 1 Robinson, SW SW SE Sec. 36-8-7. T.D. 3,138 ft.; swb. 72 B.O. in 24 hrs.; to P.O.P.
J. F. Smith No. 1 Wolfe, NE NE SW Sec. 36-7-5. Drlg. 2,435 ft.

ARKANSAS

Calhoun County

Samuel S. Alexander No. 1 Smythe, C NE NE Sec. 7-11-14. S.D.; W.O. mud pmp. 2,350 ft.
A. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13. Fsg. D.S. and bit 3,045 ft.

Columbia County

Atlantic Ref. Co. No. 1 Garrett, C NW SW Sec. 13-17-20. Drlg. 3,640 ft.
Standard Oil Co. of La. No. 1 T. Crumpler, Sec. 15-17-19. Perf. csg. 7,398-7,402 ft.; cleaning; flwd. 302 B.P.D. fluid, 184 B.O. and 118 bbls. b.s.&w.; ¾-in. ck.; T.P. 900 lbs.; C.P. 2,475 lbs.
Standard Oil Co. of La. No. 1 E. D. Harris, NW cor. NW SE Sec. 15-7-19. R.U.
Standard Oil Co. of La. No. 1 Minnie Harris, NE cor. NE SW Sec. 15-17-19. M.I. rig.
Standard Oil Co. of La. No. 2 J. L. Warren, Sec. 18-16-22. Top Buckner 6,975 ft.; 6-in. csg. 7,218 ft.; comp.; 8½ B. P.H.; ¼-in. ck.; 20% asphaltic emulsion; T.D. 7,255 ft.; reacd.; swbd; flwd. fluid from 4 to 40% b.s.; W.O. S.R.
Tide Water Seaboard No. 1 Beene, C SE NW Sec. 15-18-19. Drlg. lig.&sh. 3,058 ft.
G. H. Vaughn No. 2 Garrett, C SE SE Sec. 14-17-20. Cg. 5,405 ft.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.
C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. 10-in. csg. 63 ft.
Harford Oil Corp. No. 1 Pinning, C NE NE SW Sec. 6-13-30. S.D.; rep. drk. 1,525 ft.
Fred U. T. Smith No. 1 Waldrop, SE cor. NW Sec. 4-13-31. S.D. 1,305 ft.
Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 3,354 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson Townsite, Sec. 18-4n-9w. Set 4½-in. csg. on pkr. 1,540 ft.; S.D. 2,330 ft.
J. W. Eddington No. 1 Anderson. Drlg. sd. rk. 900 ft.
Lonoke Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. Set 10-in. csg. 150 ft.; U.R. 225 ft.
J. F. Russell No. 1 J. T. Gunter, SE cor. Sec. 17-5-10. S.D. 1,620 ft.

Miller County—Rodessa

Gerhig Co. No. 3 Mitchell, SW cor. SW SE Sec. 2-20-28. 5½-in. csg. 6,207 ft.; perf. 6,170-6,200 ft.; comp.; 23 B.P.H.; 24/64-in. ck.; T.P. 250 lbs.; C.P. 850 lbs.; T.D. 6,207 ft.
C. C. Gilger No. 1 Watts, SE cor. SW NE Sec. 2-20-26. R.U.
Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 29-15-15. R.U.
Red River Valley Oil Co. No. 1 Beck, Sec. 34-15-26. T.D. 3,008 ft.; reperf. 2,786-2,808 ft.; reset pkr. 2,954 ft.; recmtd.; perf. to cut off S.W. 3,006 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n-12e. Top. Nac. 2,160 ft.; drlg. hd. gr. L. 2,872 ft.

Nevada County

O. F. Whittaker No. 1 Edwards, Sec. 3-15-20. Drlg. sd.&sh. 2,044 ft.

Pulaski County

A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW Sec. 2-1s-13e. Rep. rig; hd. bl. sl. 3,600 ft.

Union County—Schuler

Crescent Drlg. Co. No. 1 Sewell, SW cor. NE NE Sec. 12-18-18. Fsg. 2,310 ft.; D.S. 7,590 ft.
Delta Drlg. Co. No. 1 Powledge, SW cor. NW NW Sec. 21-18-17. Drlg. rd. &gr. sh. 5,840 ft.
Fohs Oil Co. No. 1 Craig, C SE NE Sec. 5-18-14. R.U.
E. M. Jones No. 1-B Murphy Ld. Co., Sec. 13-18-18. O.W.W.O.; old T.D. 5,987 ft.; top Jones sd. 7,510 ft.; top L. 7,609 ft.; T.D. 7,700 ft.; set 7-in. csg. 7,689 ft.
E. M. Jones No. 2-B Murphy Ld. Co., SW cor. S½ NE NE Sec. 13-18-18. Drlg. rd.&gr. sh. 4,582 ft.
Lion Oil Ref. Co. No. 8 Hardy Murphy, C NE NW Sec. 9-16-15. Set 7-in. csg. 2,443 ft.; top Graves sd. 2,392 ft.; W. O.C.
Lion Oil Ref. Co. No. 1 Henry, SE cor. Sec. 12-18-18. Drlg. rd. sdy. sh. 6,600 ft.
Lion Oil Ref. Co. No. 5 Marcus, Sec. 18-18-17. Drlg. 2,610 ft.
Lion Oil Ref. No. 4 Marine, NE cor. SE SE Sec. 17-18-17. Top Jones sd. 7,560 ft.; T.D. 7,645 ft.; 7-in. csg. 7,634 ft.; perf. 7,560-71 ft.; wshg. to test.
Lion Oil Ref. Co. No. 5 Marine, SE cor. NE SE Sec. 17-18-17. Top Jones 7,573 ft.; cg. 7,621 ft.
Lion Oil Ref. Co. No. 6 Mayfield, NW cor. Lot 3, NW Sec. 18-18-17. Drlg. rd.&gr. sh. 5,900 ft.
Lion Oil Ref. No. 6-A Morgan, SE cor. Lot 1, SW Sec. 18-18-17. Top Jones sd. 7,504 ft.; top L. 7,608 ft.; set 7-in. csg. 7,661 ft.; perf. 7,550-70 ft.; comp.; 274 B.P.D.; 20/64-in. ck.; T.P. 700 lbs.; C. P. 1,075 lbs.; T.D. 7,674 ft.
Lion Oil Ref. Co. No. 7-A Morgan, C S½ Lot 7, SW Sec. 18-18-17. Drlg. 360 ft.
Lion Oil Ref. Co. No. 3 Nelson, C S½, Lot 6, SW Sec. 18-18-17. 10¾-in. csg. 1,948 ft.
Lion Oil Ref. Co. No. 1 Powledge, SE cor., Lot 2, SW Sec. 7-18-17. Drlg. rd. sdy. sh. 6,820 ft.
Lion Oil Ref. Co. No. 2 Sewell, NE cor. Sec. 13-18-18. Drlg. rd.&gr. sh. 5,700 ft.
Marine Oil Co. No. 2 J. H. Callowav, NW cor. E½ SE NE Sec. 13-18-18. Drlg. rd. sdy. sh. 6,800 ft.
Phillips Pet. Co. No. 1-B Bryan, NW cor. NE SE Sec. 13-18-18. Cd. 7,513-25 ft.; top sd. 7,512 ft.; cg. 7,525 ft.
Phillips Pet. Co. No. 1 El Dorado Bnk., SW cor. NW SE Sec. 12-18-18. 10¾-in. csg. 1,717 ft.; drlg. sdy. sh. 6,823 ft.
Phillips Pet. Co. No. 1 Edwards, SW NE Sec. 17-18-17. Drlg. rd. sh. 4,555 ft.
Phillips Pet. Co. No. 2 Gan, NE cor. SE NE Sec. 18-18-17. Top Jones sd. 7,547 ft.; T.D. 7,700 ft.; 7-in. csg. 7,680 ft.; perf. 7,572-98 ft.; comp.; 643 B.P.D.; varied cks.; T.P. 375 lbs.; C.P. 375 lbs.
Phillips Pet. Co. No. 2 Goodwin, Lot 1, NE Sec. 19-18-17. Drlg. rd.&gr. sh. 6,137 ft.
Phillips Pet. Co. No. 1 Milling, SE cor. SW Sec. 7-18-17. Drlg. rd.&gr. sh. 5,991 ft.
Phillips Pet. Co. No. 1 Murphy, Lot 2, NW Sec. 19-18-17. Drlg. rd. sh. 4,800 ft.
Phillips Pet. Co. No. 1 Nelson, Lot 3, NW Sec. 19-18-17. Drlg. rd. sh. 4,535 ft.
Phillips Pet. Co. No. 2 Sewell, Lot 3, SW Sec. 7-18-17. Top Jones sd. 7,611 ft.; T.D. 7,790 ft.; 7-in. csg. 7,747 ft.
Phillips Pet. Co. No. 3 Sewell, Lot 5, SW Sec. 7-18-17. Top Jones sd. 7,577 ft.; top L. 7,674 ft.; 7-in. csg. 7,770 ft.
Phillips Pet. Co. No. 4 Sewell, Lot 4, SW Sec. 7-18-17. Top Jones sd. 7,527 ft.; top L. 7,623 ft.; set 7-in. csg. 7,675 ft.; T.D. 7,700 ft.
Phillips Pet. Co. No. 5 Sewell, NW cor.

Lot 5, SW Sec. 7-18-17. 10¾-in. csg. 2,014 ft.

Union County—Other

J. R. Lockhart No. 1 Raulston, Sec. 12-17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.: cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,077 ft.; perf. 3,002-07 ft.: tstd. 2,750 ft. S.W.; reperf. 2,967-73 ft.; blew wild; est. 500 bbls. S.W.: P.B. 2,700 ft.; drld. out cmt. 2,980 ft.; perf. 2,968-76 ft.; set pkr. 2,960 ft.; tstd. 1,500,000 ft. gas; S.D. 2,980 ft.

MISSISSIPPI

Calhoun County

L. C. Lucas No. 1 E. C. Boland, 400 ft. E and 500 ft. S, NW cor. SW Sec. 9-22n-9e. Drlg. gbo. 755 ft.

S. & O. Properties, Inc., No. 1 G. C. Cooned, SE NE sec. 12-24n-8e. T.D. 2,300 ft., rd. bds.; S.D.

George County

Cleve Love et al No. 2 J. J. Newman Lbr. Co., C SW Sec. 9-1s-8w. Drlg. ch. 6,500 ft.

Harrison County

Big Ridge Oil Co. No. 1 Hingin, sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

G. Jefferies No. 1 Gaddis Farms, Inc., 700 ft. W line, 545 ft. N line, SE¼ Sec. 26-7n-4w. S.D.; Wilcox 3,448 ft.

Cleve Love et al No. 1 S. F. Johnson, NE cor. SE¼ sec. 29-6n-1w. Set 7-in. csg. 3,355 ft.; drlg. rd. sh. 3,737 ft.

Love Pet. Co. No. 2 Gulf State Creosote Co., 1,440 ft. N line, 100 ft. E line, Sec. 1-5n-1e. 5½-in. csg. 2,355 ft.; comp. at 2,358 ft.; I.P. 35,000,000 ft. gas; top ck. 2,357 ft.

Southern Nat. Gas Co. No. 1 Progressive Realty Co., SE SW Sec. 35-6n-4w. Top chk. 6,600 ft.; drlg. sd. 7,350 ft.

Simpson County

Goodwill O. & G. Co. No. 1 Berry, sec. 33-2n-4e. S.D. 2,810 ft.

Cleve Love No. 1 N. E. Garner, SE cor. SW NE Sec. 1-10n-17w. T.D. 27 ft.; S.D.

Yalobusha County

Acme Holding Co. No. 1 S. D. Boyle. NW NW Sec. 33-25n-7e. Drlg. 2,764 ft.

FLORIDA

Nassau County

St. Mary River Oil Corp. No. 1 Hillard Turpentine Co., Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; S.D. 4,575 ft.

Lake County

Union O. & R. Co. No. 1 Gulf Explr., sec. 17-24s-25e. S.D. 235 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark.-La. Gas Co. No. 1-B Davis Bros. Lbr. Co., NW SW Sec. 7-16-4. 9⅝-in. csg. 2,557 ft.; drlg. sh. 3,337 ft.

Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. Set 13⅜-in. 180 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. Drlg. sh. 2,625 ft.

Premier Inv. Co. No. 4 Buckelew, SE cor. NE NE Sec. 16-19-11. Set 8¼-in. csg. 82 ft.; set 6⅝-in. csg. 360 ft.; comp.; 8 B.P.D.; pmp.; top sd. 359 ft.; T.D. 417 ft.

Premier Inv. Co. No. 4 Vance, SE Sec. 16-19-11. Drlg. 255 ft.

J. B. Stovall et al No. 3 Ark. Fuel Oil Co. fee, NE SE Sec. 15-19-11. 6-in. csg. 362 ft.; W.O.C.

Triangle Drlg. Co. No. 2 Roy, C NW SW Sec. 18-17-11. Por. L. 3,118 ft.; set 5½-in. csg. 3,119 ft.; T.D. 3,144 ft. tstg.; comp.; 175 B.P.D.; open tbg.; T.P. 100 lbs.

Triangle Drlg. Co. No. 1-B Schuler, SE cor. SW NW Sec. 13-17-12. Drlg. sh. 960 ft.

Caddo Parish

R. E. Allison No. 2 Ellerbee, 708 ft. E line, 1,992 ft. N line, Sec. 28-18-14. Base ch. rk. 1,750 ft.; 9⅝-in. csg. 2,059 ft.; cd. por. oolitic L. 4,804-42 ft.; S.G.; set 7-in. csg. 5,546 ft.; por. L. 5,547-69 ft.; comp.; 65 B.P.H.; ⅝-in. ck.; T.P. 475 lbs.; C.P. 750 lbs.; T.D. 5,569 ft.

R. E. Allison No. 1 State, SE cor. Sec. 28-18-14. Top anhy. 4,068 ft.; T.M.A. 4,337 ft.; drlg. sh.&L. 4,610 ft.

R. L. Bauman No. 1 Slattery Est., 660 ft. NW cor. Sec. 35-18-14. Set 13⅜-in. csg. 300 ft.; set 9⅝-in. csg. 2,053 ft.; gas sd. at 2,550 ft. blew out; rng. wild with D.S. in hole; made wtr.; sd. est. 10,000,000 ft. gas; S.I.; D.S. stk. 2,550 ft.; P.B. 2,000 ft.; to sdtrk.; 488 ft. stk. D.S.; W.O.

Carney et al No. 1 Hart; O.W.W.O. Old T.D. 2,372 ft.; C.O. and arng. set 6-in. csg. 1,495 ft.; tstg. 1,800 ft.

S. H. Cassidy No. 1 Caddo Lve. Bd. T.D. 1,661 ft.; S.W. and abd.

W. D. Chew No. 5 Stiles, SW cor. Sec. 27-21-16. 4½-in. csg. 1,800 ft.; tstd. SW. 1,908 ft.; P.B. 1,848 ft.; W.O.C.

W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Set 6-in. csg. 1,945 ft.; T.D. 1,954 ft.; tstd. S.W. 1,954 ft. and P.B. 1,944 ft.; W.O.C.

Paul Cooper et al No. 1 Stiles, SE cor. NE NW Sec. 33-21-16. Tstd. dry; W.O.; T.D. 1,962 ft.; D.&A.

Paul Cooper No. 2 Stiles, SW SE Sec. 28-21-16. R.U.

Tony DeGrazier No. 1 Welsh, NE cor. Sec. 3-20-16. 7-in. csg. 925 ft.; tstd. S.W.; S.O. 968 ft.; W.O.S.R.

Falcon Oil Co. No. 2 Glassell-Youree, SE cor. Sec. 26-20-15. Tstd. dry; S.O.&S. W.; will acd.; T.D. 2,306 ft.; W.O.S.R.

M. M. Ferrell No. 1 Dyer, Sec. 10-20-16. Set 6-in. csg. 1,008 ft., T.D.; W.O.S.R.

G. W. Gibson No. 1 Muslow, NW NW Sec. 6-20-15. Drlg. 850 ft.

Hillman et al No. 1 Gilbert, SW cor. Sec. 18-20-15. S.D. 2,180 ft.

Hollywood Oil Corp. No. 1 C.&B. Realty Co., C NE NE Sec. 22-17-14. B. ch. rk. 1,745 ft.; top anhy. 4,165 ft.; drlg. sh. &L. 4,286 ft.

W. C. Knox No. 1 Burton, NW cor. Sec. 7-20-15. 10-in. csg. 105 ft.; drlg. 905 ft.

C. D. Lee No. 1 Meyer, SE cor. Sec. 33-18-14. Drlg. ch. rk. 1,602 ft.

Manziel et al No. 1 Muslow, NE cor. NW SW Sec. 6-20-15. 7-in. csg. 1,350 ft.; comp.; 55 B.P.D.; T.D. 1,650 ft.

F. W. Martin and Superior Oil Corp No. 1 Querbes, Sec. 8, Reg. Sec. 20 17-13. Set 9⅝-in. csg. 1,252 ft.; T.D. 6,155 ft.; top anhy. 4,096 ft.; T.M.A. 4,370 ft.; B.M.A. 4,628 ft.; B. stringer anhy. 4,720 ft.; top Tr. Pk. 5,898 ft.; S.D.; W.O.

Midfield Oil Co. No. 1 Ramsey, NE cor. Sec. 32-21-15. Set 7-in. csg. 1,370 ft.; T.D. 1,388 ft.; comp.; pmp. 10 B.P.D.

J. Ober & Sons No. 1 fee, SE cor. Sec. 36-21-16. Set 8-in. csg. 1,431 ft.; tstd dry 1,684 ft.; S.D. 1,760 ft.

Oils, Inc., No. 1 Cazaux, sec. 10-16-13 S.D.; contract depth, 3,500 ft.

Papadokis & Poppas No. 4 Spell, SE cor. Sec. 28-21-15. Set 7-in. csg. 1,380 ft.; comp.; pmp.; 35 B.P.D.; T.D. 1,655 ft.

Rodessa O. & R. Co. No. 1 Chandler, C SW NE Sec. 34-18-14. Drlg. sh. 935 ft.

Harry Smith No. 1 Sproull, SE cor. Sec. 32-20-16. Drlg. 720 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW Sec. 17-20-15. Pmpd. S.W.; arng. dpn. 1,860 ft.

Southern Star Pet. Corp. No. 2 Muslow, NE cor. SE NW Sec. 17-20-15. Tstd. S.W.; S.O. 2,198 ft.

Nat Wissman No. 5 Stiles, NW NW Sec. 6-20-15. R.U.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. sh. 2,008 ft.

Claiborne Parish

Maritzky & Bibby No. 1 McClung, Sec 29-21-7. 6-in. csg.; T.D. 1,822 ft.

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Set 10¾-in. csg. 887 ft.; W.O.C.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 6 12-16. Cg. 2,760 ft.

G. H. Collins et al No. 2 Joiner, Sec. 28-11-12. Tstd. S.W. 3,001 ft.; P.B. 2,978 ft. and tstd. S.W.; D.&A.

Grant Parish

C. R. Bowers No. 1 Harrison Est., Sec. 21-8-5. Drlg. sdy. sh. 2,675 ft.

Red River Parish

J. M. Forgetson No. 1 Marston, SE SE Sec. 30-14-10. Top gas sd. 960 ft.; 7-in. with 110 ft. perf. on bttm. at 1,074 ft.; T.D. 1,074 ft.

J. F. Lent No. 1 Chicago Coal & Ld Co., SE cor. Sec. 17-13-11. T.D. 2,975 ft.; W.O.

Magnolia Pet. Co. No. 59 Pugh, Sec. 12-12-11. Drlg. sh. 1,310 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec. 20-13-10. Drlg. sh. 1,428 ft.

H. D. Rogers No. 3 Long Bell Lbr. Co., NE cor. NW Sec. 30-13-19. 4½-in. csg. 1,492 ft.; tstd. dry 1,623 ft.

Sabine Parish

Addison & Peterson No. 1 Dew, SE cor. SW SE Sec. 22-8-11. S.D. 2,530 ft.

W. D. Ambrose No. 1 Sabine, SW cor. SE Sec. 33-8-13. Drlg. sh. 2,010 ft.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; S.D. 2,608 ft.

LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Tstd. dry 2,130 ft.; tstg. 2,340 ft.

Major Oil Co. No. 1-B Bowman-Hicks, C NW SW Sec. 8-7-12. D.&A. 2,913 ft.

Morris Co. No. 1-A Ervine & Bishop, C NE SW Sec. 14-7-13. Drlg. sh. 1,270 ft.

Geo. L. Pace No. 3 Logan Oil Co., SW NW Sec. 26-10-13. Tstd. dry 1,915 ft.; b. ch. rk. 1,936 ft.; tstg. 1,952 ft.

Richards & Holloway No. 1 Bowman Hicks, Sec. 11-7-13. Tstd. dry 2,404 ft.; acdzd. with 5,000 gal.; tstd. dry; T.D. 2,548 ft.; W.O.S.R. 2,548 ft.

Richards & Holloway No. 1 Long Bell, C NW NE Sec. 15-7-13. 10-in. 95 ft.; 5½-in. 2,130 ft.; tstd. S.G. and used 5,000 gal. acd.; tstg. 2,392 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft. P.B. 2,585 ft.; tstd. dry S.D.; W.O. 2,585 ft.

Sklar & Neighbors No. 1 Martinez, Sec. 11-7-13. Drlg. 50 ft.

C. H. Smith No. 1 Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Rep. rig 30 ft.

H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE Sec. 8-7-13. R.U.

J. L. Spier No. 1 Hale, NE SE Sec. 1-7-13. P.B. 2,439 ft. to test; O.T.D. 2,519 ft.

Tropical Oil Co. No. 1 Long Bell Lbr. Co., Sec. 5-8-13. D.S.T. 3,192-3,254 ft.; tstg. 65 ft. mud; S.G. in 10 min.; S.D.; contr. depth, 3,507 ft.; tstd. S.G. 3,204-12 ft.

Lee Whitehurst No. 2 First Natl. Bnk., C SE NW Sec. 14-7-13. Drlg. 2,085 ft.

Zwolle Synd. No. 1 Mansfield Lbr. Co., Sec. 8-7-19. T.D. 4,323 ft.; 5-in. csg. 3,830 ft.; drlg. plug 4,323 ft.; 2,500 gal. acd.; perf. 3,730-70 ft.; tstd. dry; W.O. 3,770 ft.; O.T.D. 4,323 ft.

Webster Parish

Hunt Oil Co. No. 3 Bodcaw-Stewart, C NW SW Sec. 34-21-10. Holloway sd. 5,822-46 ft.; 9⅝-in. csg. 5,951 ft.; tstd. S.O.&G.; T.D. 5,840 ft.; O.T.D. 5,956 ft.; shot form. 5,830-40 ft. with 200 qts. nitro and swbg. to test.

Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Hollw. sd. 5,595-5,603 ft.; set 9⅝-in. csg.; did not test Hollwy. sd.; drlg. sh.&L. 6,288 ft.

Hunt Oil Co. No. 10 Davis, C SE SE Sec. 13-21-10. Drlg. L. 5,010 ft.

Hunt Oil Co. No. 20 Hope, C NE NW Sec. 24-21-10. Top Holloway sd. 5,596-5,604 ft.; set 9⅝-in. csg. 5,580 ft.; did not test Holloway sd.; top Bodcaw sd. 8,165 ft.; top Davis sd. 8,479 ft.; cutting stk. D.S. 6,118 ft.

Hunt Oil Co. No. 22 Hope Est., C SE SW Sec. 24-21-10. Drlg. sh. 1,083 ft.

Hunt Oil Co. No. 1 Pardee, Sec. 24-21-10. Set 13⅜-in. csg. 797 ft.; top "A" sd. 7,870 ft.; odor and stain of oil: top Bodcaw sd. 8,252 ft.; top Davis sd. 8,523 ft.; T.D. 8,777 ft.; set 7-in. csg.; W.O.C.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Holloway sd. yet; set 9⅝-in. csg. 5,730 ft.; drlg. sh.&L. 7,824 ft.

Magnolia Pet. Co. No. 1 Merritt Unit, C SW NW Sec. 14-21-10. Top Tr. Pk. 5,715 ft.; no Holloway; 9⅝-in. csg. 5,850 ft.; drlg. sd.&sh. 7,423 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝-in. csg. 5,920 ft.; drlg. hd. sd. 7,958 ft.

Midstates Oil Corp. No. 1 Welori Lbr. Co. Unit, NE cor. NW Sec. 3-20-10. 9⅝-in. csg. 5,699 ft.; drlg. rd. bds. 7,408 ft.

North American Oil Consolidated Co. No. 3 E. L. Stewart, C SE SE Sec. 29-21-10. Hollwy. sd. 5,864-74 ft.; 9⅝-in. csg. 5,865 ft.; tstg.

Harry Morgan No. 2-A Hope, C SE SW Sec. 24-21-10. Top "D" sd. 8,056 ft.; Bodcaw sd. 8,138-95 ft.; 7-in. csg. 8,142 ft.; T.D. 8,195 ft.; comp.; 19 B.P.H. dist.; ⅞-in. ck. and est. 6,000,000 ft. gas; T.P. 2,500 lbs.; C.P. 2,700 lbs.

Ohio Oil Co. No. 51 Bodcaw Acct. 2, NE cor. Sec. 15-21-10. Drlg. sd. 3,280 ft.

Ohio Oil Co. No. 1 W. Cox, Acct. 2, SE cor. SW Sec. 15-21-10. No Hollwy. sd.; 9⅝-in. 5,714 ft.; drlg. L.&sh. 6,614 ft.

Ohio Oil Co. No. 8 B. Sydney Hrs., SW cor. Sec. 16-20-10. R.U.

Oliphant Oil Corp. No. 1 Fred Banks, C SE NW Sec. 2-20-10. Set 9⅝-in. csg. 5,616 ft.; drlg. L.&sh. 6,278 ft.

Oliphant Oil Corp. No. 1 Gray & Stephens, C SE SW Sec. 35-21-10. Drlg. sd. 385 ft.

Oliphant Oil Corp. No. 1-B Stewart, C NW NE Sec. 5-20-10. Top Tr. Pk. 6,117 ft.; Holloway sd. 6,160-67 ft.; 9⅝-in. csg. 5,884 ft.; drlg. hd. sd. 7,960 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,615 ft.; drlg. sdy. sh. 6,357 ft.

Stanolind O. & G. Co. and Hunt Oil Co. No. 1 Pardee-Coffee Unit, C NE NE Sec. 36-21-10. Drlg. sh. 1,035 ft.

Stanolind O. & G. Co. No. 1 Webster Inv. Co., C NE NE Sec. 35-21-10. 13⅜-in. csg. 737 ft.; drlg. sh. 3,905 ft.

Union Prod. Co. No. 2 Stewart, SW SW Sec. 28-21-10. D.S.T. 5,835-44 ft.; tstd. 1 stand mud, 3 stands oil, and 3 stands brksh. wtr.; perf. csg. 5,808-20 ft.; 5½-in. csg. 5,974 ft.; tstd. dry; T. D. 5,981 ft.; will reperf. csg.

Woodley Pet. Co. No. 1 Couch, C NW SW Sec. 36-21-10. 13⅜-in. csg. 664 ft.; drlg. sd. 750 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Clodv-Primeaux, Sec. 65-12s-3e. Drlg. sh. 3,053 ft.

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Bancroft—Beauregard Parish

Geo. E. Lilly et al No. 1 W. K. Rice, Sec. 15-6s-13w. Drk.

Republic Prod. Co. No. 2 Columbia Ld. & Tmbr. Co., Sec. 16-6s-13w. Drlg. sh. 810 ft.

Republic Prod. Co. No. 2 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. R.U.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, Sec. 21-16s-12e. Drlg. sd.&sh. 10,866 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 4 State-Bay St. Elaine, Sec. 19-23s-20e. T.D. 6,811 ft.; wshg. and rmg. to bttm.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, Sec. 29-8s-11e. Drlg. sh. 8,413 ft.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,021 ft.; D.P. stk.; P.B. to 5,000 ft.; sdtrkd. at 5,000 ft.; drld. to 6,984 ft.; 9⅝-in. csg. 6,982 ft., T.D. 8,266 ft., salt; P.B. 8,150 ft.; D.S. stk.; fsg.

Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. T.D. 8,500 ft.; 9⅝-in. csg. 8,518 ft.; top salt 9,294 ft.; T.D. 9,295 ft.; P.B. 8,999 ft.; W.

Give The Little Can A Big Hand!

"The Entirely Different Boiler and Engine Treatment"

That's what power plant operators in all industries are doing. Such popularity must be deserved.

Sand-Banum is always "on its toes". It comes ready for use in 16 oz. cans and one can will protect a 250 Hp. boiler from scale and corrosion for one month!

Sand-Banum is a "great performer". It does a perfect job regardless of the operating conditions or the nature of the water used!

"Swing" in with this popular trend that is increasing efficiency and economy wherever it is used. Its pure colloidal action is absolutely harmless! Every can is sold on a "Satisfaction or No Money" guarantee.

AMERICAN SAND-BANUM COMPANY, Inc.
9 ROCKEFELLER PLAZA NEW YORK CITY

All Sizes of

MAC BALLS & SEATS

in

STEEL . . . . BRASS
BRONZE
AND STAINLESS

Ask for complete details and price list.

McGREGOR WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

O.C.; set 680 ft. of 5½-in. csg. 8,997 ft.; perf. csg. 8,900-20 ft.; flwd. oil and wash wtr. for 20 hrs.; went dead; pull tbg.; perf. csg. 8,900-20 ft.; sqzd. with cmt.; perf. csg. 8,888-98 ft.; flwd. oil and S.W.; went dead; S.D.

Big Lake—Cameron Parish

Union Sulphur Co. No. 1 Hebert, Sec. 18-12s-8w. T.D. 10,521 ft.; fsg.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Loc.
Texas Co. No. 5 State, Sec. 19-23s-20e. T.D. 6,240 ft.; sdtrkd.; drlg. sdy. sh. 6,105 ft.
Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and sanded up; S.D.; abd.
Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. Drlg. sh. 2,465 ft.
Magnolia Pet. Co. No. 23 Cameron Meadows, Sec. 21-14s-13w. R.U.

Chacahoula—LaFourche Parish

Sun Oil Co. No. 3 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. Driving piling.

LEGAL

Sale of oil and gas leases—Department of the Interior, General Land Office, Washington, D. C. Notice is given that the following described lands and deposits of oil and gas therein contained are offered to the qualified bidder of the highest bonus per acre for leasing pursuant to section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386: Unit No. 1, the principal island, East Timbalier Island, known locally as Bird Island, located in fractional Secs. 34, 35, and 36, T. 23 S., R. 21 E., Secs. 2 and 3, T. 24 S., R. 21 E., and Sec. 31, T. 23 S., R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 295.77 acres, more or less. Unit No. 2, two islands, adjoining Unit No. 1 in a northeasterly direction between said principal island and Raccoon Pass, Island No. 1 located in fractional Sec. 31, and Island No. 2 located in fractional Sec. 32, both in T. 23 S., R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 11.69 and 69.29 acres, respectively, more or less. Sealed bids will be received in the office of the Secretary of the Interior up to 12:00 o'clock (noon), October 31, 1938. Bids must be submitted on each unit separately but both units, if awarded to the same bidder, may be included in a single lease. Each bidder must submit a certified or cashier's check or draft for 1/5 of the amount bid, payable to the order of the Secretary of the Interior, and furnish a showing of qualifications as required by section 7 of Circular 1386. The remaining 4/5, together with the annual rental at the rate of $1 per acre, must be paid by the successful bidder prior to the issuance of lease, and the deposits of other bidders will be returned. The envelopes should be marked plainly "Bid for Unit No. — (1 or 2), East Timballer Area. Not to be opened before noon, October 31, 1938." The bidders are warned against violations of the provisions of Sec. 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. Protests by the State of Louisiana and others claiming under the State against the granting of Government leases for the group of islands on the ground that they are the property of the State were overruled by the Secretary of the Interior in a decision rendered July 29, 1938 (A. 21589), after an oral hearing at which the protestants were represented. The Secretary held that the United States has asserted ownership of and jurisdiction over East Timbalier Island for more than 100 years and that the group of islands are public lands of the United States. Commissioner, General Land Office.

REGISTERED PROFESSIONAL ENGINEERS
GAS AIR WATER
REPRESSURING
INSTALLATION OPERATION
PETROLEUM ENGINEER
JO H CABLE
WICHITA FALLS TEXAS
GAS MEASUREMENT PERMEABILITY
COMPRESSOR PLANTS POROSITY
BOTTOM HOLE PRESSURE SATURATION
GAS OIL RATIOS RECOVERABLE OIL
CONTROL OF FLOW THRU FORMATION
REGISTERED PROFESSIONAL ENGINEERS

Charenton—St. Mary Parish

H. J. DeArman No. 1 Oak Lawn Plantation, Sec. 24-13s-10e. S.D. 8,465 ft.
Kinsley Oil, Inc., No. 2 Hertel, sec. 21-13s-9e. T.D. 1,133 ft.; 7-in. csg. 1,112 ft.; tstd. S.W.; R.U. to pmp.
Pan American Prod. Co. No. 10 Veeder, Sec. 11-13s-9e. Loc. abd.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico. T.D. 2,458 ft.; rep. rig.

Darrow—Ascension Parish

Humble O. & R. Co. No. 19 Community, Sec. 31-10s-2e. T.D. 7,280 ft., salt; P.B. 7,120 ft.; W.O.C.
Humble O. & R. Co. No. 4 Landry, Sec. 34-10s-2e. Drk.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 8 State, Sec. 5-22s-16e. Drlg. sd.&L. 6,277 ft.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. Drlg. sd. 814 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. R.U.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. 9⅝-in. csg. 6,775 ft.; drlg. sdy. sh.& L. 9,896 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, Sec. 40-17s-15e. T.D. 10,752 ft.; P.B. 9,178 ft.; 5-in. csg. 9,178 ft.; tstd. S.W. 9,093-95 ft.; tstg. at 8,880-85 ft.; showed S.W.; flwg. 20 B.F.P.H.; 10/64-in. ck., 12% oil, balance S.W.; killed; pulling tbg.

Garden Island—Plaquemines Parish

Texas Co. No. 30 State, Sec. 38-23s-33e. Drlg. sh. 4,515 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 9 Castle, Sec. 13-9s-8w. Drlg. sh.&L. 5,893 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 2 Grand Prairie Lve., sec. 48-20s-18e (1,320 ft. W of No. 1) T.D. 6,148 ft.; 9⅝-in. csg. 6,125 ft.; flwd. wash wtr. and oil; went dead; well blew out while pulling screen; killed; wshg. to bttm.
Gulf Ref. Co. No. 1 State-QQ, Sec. 6-20s-19e. Loc.

Hackberry—Cameron Parish

Berry Oil Corp. No. 1 Cora E. Lyons, sec. 28-12s-10w (West Hackberry). T.D. 3,535 ft.; 7-in. csg. 3,445 ft.; perf. csg. 3,375-82 ft.; pmpg. 98% S.W.; 60 bbls. fluid; abd.
Gulf Oil Corp. No. 24 Erwin, Sec. 13-12s-10w. Loc.
Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. T.D. 3,201 ft.; P.B. 2,830 ft.; W. O.C.; to sdtrk. jnk.; fsg.; P.B. 2,830 ft.; sdtrkd. 1,121 ft.; T.D. 3,215 ft.; 7-in. csg. 3,196 ft.; T.D. 3,234 ft.; I.P. 272 B.P.D.; ¼-in. ck.
Stanolind O. & G. Co. No. 12 Carter, Sec. 22-12s-10w. T.D. 3,647 ft.; 7-in. csg. 3,515 ft.; P.B. 3,605 ft.; swbg.
Superior Oil Co. No. 1-C Dorrisse, sec. 30-12s-10w. Drlg. sh. 6,771 ft.
Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft.; 7-in. csg. 8,050 ft.; perf. csg. 7,903-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf. csg. 7,763-74 ft.; W.O.S.R.
Union Sulphur Co. No. 7 Caldwell et al, Sec. 37-12s-10w. Drk.
Union Sulphur Co. No. 7 Hanzen, sec. 13-12s-10w. T.D. 4,165 ft.; P.B. 4,010 ft.; sdtrkd. 4,083 ft.; T.D. 4,142 ft.; P. B.; sdtrkd.; drlg. sh.&L. 3,800 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e. Cg. sh.&L. 10,991 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., Sec. 38-13s-9e. T.D. 10,645 ft.; milling to sdtrk. stk. D.P.; sdtrkd. 10,253 ft.; S.D. 10,615 ft.; perf. csg. 10,598-10,612 ft.; tstd. S.W.; P.B. 10,514 ft.; perf. csg. 10,466-80 ft.; tried to blow out; no recovery; P.B. 10,526 ft.; perf. csg. 10,516-26 ft.; tstd. 950 lbs. pres. and S.W.; perf. csg. 9,960-70 ft.; tstd. 850 lbs. press.; perf. csg. 9,949-60 ft.; recvd. 297 jts. oil, 16 jts. of S.W. in 45 min.; run screen.

Jefferson Island—Iberia Parish

Texas Co. No. 1 State-Lake Peigneur, Twp. 12s-5e. Top salt 3,642 ft.; base salt 3,741 ft.; drlg. sdy. sh.&L. 7,511 ft.

Jennings—Acadia Parish

F. W. Bennett Oil Corp. No. 1 Grace, Sec. 45-9s-2w. Drlg. sd.&sh. 4,933 ft.
W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; S.D.
Cosmo Pet. Co. No. 1 Jennings-Clement, sec. 46-9s-2w. T.D. 3,552 ft.; sdtrkd.; T.D. 3,581 ft.; fsg.; P.B. 2,035 ft.; W. O.C.; T.A.
Frio Oil Co. No. 2 Gulf fee, sec. 45-9s-2w (NW flank). 10¾-in. csg. 1,512 ft. T.D. 6,882 ft.; P.B. 6,655 ft.
Frio Oil Co. No. 1 Iowa-Jennings, Sec. 45-9s-2w. T.D. 6,687 ft.; P.B. 4,300 ft.; T.D. 6,170 ft.; twisted off drill collar; fsg.; sdtrkd. 5,550 ft.; T.D. 7,335 ft.; P.B. 2,965 ft.; W.O.C.
Frio Oil Co. No. 2 Iowa-Jennings, Sec. 45-9s-2w. 10¾-in. csg. 1,555 ft.
Glassell & Glassell No. 6 Trushell, sec. 42-9s-2w. Drlg. sh. 7,419 ft.
Guaranty Oil Co. No. 2 Houssere-Latrielle, Sec. 47-9s-2w. R.U.
Guaranty Oil Co. No. 1 Rowson & Haber, Sec. 46-9s-2w. T.D. 3,403 ft.; 5 in. csg. 3,403 ft.; perf. csg. 3,380-95 ft.; I.P. 150 B.P.D.; 5/32-in. ck.
Gulf Oil Corp. No. 40 Arnaudet, sec. 48-9s-2w. T.D. 4,483 ft.; run 9⅝-in. csg. 4,478 ft.; drlg. sd. rk. 4,800 ft.
Gulf Ref. Co. No. 1 Lamb, Sec. 45-9s-2w. R.U.
L. & L. Oil Co. No. 2 Houssiere Latrielle, Sec. 47-9s-2w. T.D. 2,430 ft.; abd.
L. & L. Oil Co. No. 3 Houssiere-Latrielle, Sec. 47-9s-2w. Drlg. 680 ft.
Ladak Oil Corp. No. 7 Jennings, Sec 46-9s-2w. T.D. 1,762 ft.; swbg. 8 B. P.D.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,995 ft.; P. B. 1,774 ft.; tstd. S.W.; S.D.; abd.
Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.; S.D. abd.
Port City Oil Co. No. 22 Jennings-Haywood, Sec. 41-9s-2w. Drlg. sh. 900 ft.
Shell Pet. Corp. No. 5 Community, Sec. 40-9s-2w. R.U.
Stanolind O. & G. Co. No. 113 Crowley & Mineral Co., Sec. 48-9s-2w. Loc.
Superior Oil Co. No. 8 Jennings-Haywood, Sec. 41-9s-2w. Drlg. sd.&sh. 5,514 ft.
Superior Oil Co. No. 15 Leckelt, Sec. 42-9s-2w. Drlg. sh. 5,260 ft.
Three Sands Oil Co. No. 2 Clement, Sec 46-9s-2w. 6-in. csg. 1,700 ft.; drlg. sd. &sh. 1,810 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,3[illegible] ft.; sdtrkd.; T.D. 3,300 ft.; well blew out; conditioning hole at 2,800 ft.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien. Adams, Sec. 9-17s-24e. Drlg. L. 7,703 ft.
Texas Co. No. 12 Lafitte, Sec. 20-17s-24e. Drlg. sdy. sh.&L. 7,319 ft.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. T.D. 10,300 ft.; 9⅝-in. csg. on bttm.
Texas Co. No. 10 Rigolet Cooperative Fur Co., Sec. 28-17s-24e. Drlg. sh.&L. 10,188 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 42 State-Lake, sec. 40-21-19e. Top salt 11,301 ft.; T.D. 11,333 ft.; 7-in. csg. 11,333 ft.; drld. out to 11,240 ft.; recvd. 1½ jts. of dist.; run screen.

Lake Pelto—Terrebonne Parish

Texas Co. No. 21 State, sec. 8-23s-18e. T.D. 6,058 ft.; P.B. and sdtrkd.; T.D. 5,761 ft.; PB. 5,536 ft.; to sdtrk.; T.D. 6,048 ft.; P.B. and sdtrkd. 5,100 ft.; T.D. 6,041 ft.; P.B. sdtrkd.; drlg. sdy. sh. 5,916 ft.
Texas Co. No. 22 State, Sec. 8-23s-18e. Bldg. drk.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, Sec. 35-21s-22e. Cg. sd. 8,984 ft.
Texas Co. No. 7 Leeville, sec. 27-21s-22e. Drlg. sh. 7,816 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Laterre, Inc., Sec. 31-19s-19e. Dredge canal.
Humble O. & R. Co. No. 1 Robert Verret, Sec. 32-19s-19e. Drlg. hd. sd.&gvl. 1,876 ft.; 20-in. csg. 296 ft.; 13⅜-in. csg. 3,164 ft.; cd. oil sd. 8,463-85 ft.; 9⅝-in. csg. 9,056 ft.; drlg. sh. 11,532 ft.

Lockport—Calcasieu Parish

Magnolia Pet. Co. No. 23 Miller, Sec. 9-10s-9w. T.D. 7,952 ft.; P.B. 6,774 ft.; tstd. S.W.; P.B. 4,363 ft.; perf. csg. 4,355-58 ft.; I.P. 51 B.P.D.; pmpg.
T. C. Markley No. 1 Farquhar (offset Continental No. 1 J. H. Moss). T.D. 6,733 ft.; P.B. 5,300 ft.; W.O.C.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 5 State-Lake Long, Sec. 64-17s-19e. Drlg. sh. 2,764 ft.; 13⅜-in. csg. 2,761 ft.; 9⅝-in. csg.; T.D. 9,398 ft.; oil sd. 9,342-98 ft.; cd. sd. S.O. &G. 10,228-37 ft.; T.D. 10,240 ft.; perf. csg. 10,232-36 ft.; I.P. 567 bbls. 21 hrs.; 12/64-in. ck.
Fohs Oil Co. No. 6 State-Lake Long, Twp. 17s-19e. M.I.M.

New Iberia—Iberia Parish

H. Fotiadés No. 7 Gulf Ld., Sec. 25-12s-7e. Drk.
Wm. Helis No. 6 Schwing, Sec. 56-12s-7e. Salt 3,949-50 ft.; P.B. 1,850 ft.; T.D. 3,938 ft.; trying to sdtrk. at 3,872 ft.; T.D. 5,352 ft.; sdtrkd.; T.D 5,012 ft.; 7-in. csg. 4,960 ft.; I.P. 818 B.P.D.; ¼-in. ck.
Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.
Texas Co. No. 5 Bryant, Sec. 25-12s-7e R.U.
Texas Co. No. 6 Duhe, Sec. 26-12s-7e. T.D. 1,322 ft.; S.W. disposal well.
Texas Co. No. 8 Duke. Sec. 24-12s-7e. T.D. 5,940 ft., salt; 7-in. csg. 5,931 ft. I.P. 435 B.P.D.; ¼-in. ck.
Texas Co. No. 1 Gonsoulin, Sec. 13-12s-7e. Drlg. sh.&L. 4,990 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 Staker, Sec. 33-8s-1e. Drk.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nezal. Drk.
Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. T.D. 4,630 ft.; S.D.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 37 Orleans Lv. Bd., Sec. 13-18s-15e. Loc.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., Sec. 18-19s-17e. T.D. 8,189 ft.; 7-in. csg. 8,162 ft.; I.P. 389 B.P.D.; 7/32-

LEGAL

NOTICE OF SALE

NOTICE IS HEREBY GIVEN that Luther Bohanon, as receiver for Rajah, Inc., has been authorized and directed by the District Court of Oklahoma County, Oklahoma, to offer for sale the following described property, to-wit:

(1) Oil and gas lease on Lots 7, 8 and 9, Block 5, Reno Avenue Addition to Oklahoma City, Oklahoma, on which is located a well producing approximately 14 barrels of oil per day; and
122′ Moore Steel Derrick
52′ Galvanized Belt House
24′ x 18′ Engine House
Oil Well Steam Pumping Engine
35 H. P. Steam Boiler
18′ Band Wheel, Shaft and Counterbalance and Jack Posts
Set of Bull Wheels
55 H. P. 4-Cylinder CHK Waukesha Gas Engine
Steam Engine Fly wheels and weights
V Belt Band Wheel
6334′ 2″ Upset Tubing
6334′ ⅝″ and ⅞″ Mixed Sucker Rods
Mid-Continent Pacific Oil Pump
6280′ 6⅝″ Flow String Casing
5480′ 9″ Casing
430′ 15″ Surface Pipe
2 100-Barrel Welded Steel Tanks, Connections, Staircase and Walkways
Heavy Duty American Separator
Storage Tank, pump and pumphouse
Pumping Belt
6⅝″ Oil Control Head
6⅝″ Master Gate
Walking Beam
Sampson Post
Headache Post
Rod Hangers

That he will accept bids up to and including October 20, 1938, at 1405 Ramsey Tower, Phone 2-0137, Oklahoma City, Oklahoma, on any part or all of the above described property, subject to the right to reject any of said bids. Bids will be accepted by mail, wire or in person.

Luther Bohanon,
Receiver of Rajah, Inc.

LEGAL

PROTEST AGAINST SALE OF OIL AND GAS LEASES BY DEPARTMENT OF INTERIOR, COMMISSIONER, GENERAL LAND OFFICE, WASHINGTON, D. C.

The Commissioner, General Land Office, Washington, D. C., is advertising in this and other publications for bids receivable up to 12:00 o'clock (Noon) October 31, 1938, for the sale of oil and gas leases covering the lands which are described in said advertisements, as follows, to-wit:

Unit No. 1. The Principal Island, East Timballer Island, known locally as Bird Island, located in fractional Secs. 34, 35 and 36 T. 23, S. R. 21 E., Secs. 2 and 3 T. 24 S. R. 21 E. and Sec. 31 T. 23 S. R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 295.77 Acres more or less.

Unit No. 2. Two Islands adjoining Unit No. 1 in a Northeasterly direction between said principal Island and Raccoon Pass, Island No. 1 located in fractional Sec. 31 and Island No. 2 located in fractional Sec. 32 both of T. 23 S. R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 11.69 and 69.29 Acres, respectively, more or less.

Notice is hereby given to all prospective bidders and to all others whom it may concern, that the State of Louisiana has protested against and does not acquiesce in the holding of the Secretary of the Interior referred to in said advertisement, and contends that it, the State of Louisiana, is the owner of all the lands described in said advertisement and of the oil, gas and other minerals therein and of the rights to minerals therein and thereunder, and that neither the United States of America nor any official thereof, including the Secretary of the Interior and the Commissioner of the General Land Office, have any right, power or authority to grant any mineral lease covering or affecting said lands or any part thereof and that the State of Louisiana will enforce and protect its rights as owner of said lands and every part thereof and its rights as such owner to oil, gas and other minerals therein or thereunder.

STATE OF LOUISIANA
By LUCILLE MAY GRACE,
Register State Land Office.
By GASTON L. PORTERIE,
Attorney General
of the State of Louisiana.

in. ck.; T.D. 800 lbs.; C.P. 400 lbs.
Gulf Ref. Co. No. 4 State, Sec. 17-19s-17e. T.D. 11,014 ft.; P.B. 10,978 ft.; tstd. S.W.; P.B. 10,780 ft.; perf. csg. 10,745-60 ft.; made sqze. job 10,060-70 ft.; perf. csg. 9,685-90 ft.; tstd. S.W.; P.B. 8,921 ft.; perf. csg. 8,994-9,006 ft.; tstd. S.W.; perf. csg. 8,992-97 ft.; tstd. S.W.; made sqz. job; perf. csg. 8,151-71 ft.; tstd. drlg. mud; P.B. 8,108 ft.; drld. cmt. to 8,150 ft.; perf. csg. 8,120-49 ft.; recvd. 2,630 ft. oil, and 708 ft. oil and S.W.; run screen.
Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.
Gulf Ref. Co. No. 6 State, Sec. 17-19s-17e. Driving piling.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; S.D.
Amerada Pet. Corp. No. 2 South Coast Corp., Sec. 35-15s-19e. T.D. 12,200 ft.; 4½-in. csg. 10,189 ft.; P.B. 12,164 ft.; perf. csg. 12,049-12,120 ft.; sqzd. perf.; drld. out to 12,135 ft.; perf. csg. 11,840-11,960 ft.; tstg.
Amerada Pet. Corp. No. 3 South Coast Corp., Sec. 34-15s-19e. Drlg. sh. 1,950 ft.
Tide Water Oil Co. No. 1-A South Corn., Sec. 34-15s-19e. Drlg. brkn. sd.&sh. 8,236 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 15 United Ld. Co., Sec. 15-10s-4e. Spd.
Sorrento Pet. Corp. No. 2 White, Sec. 22-10s-4e. S.D. 105 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, Sec. 36-10s-4w. T.D. 12,088 ft.; set retainer 9,038 ft.; sqzd. with cmt.; drld. out to 9,860 ft.; perf. csg. 9,865-80 ft.; tbg. hung; pulling.
Lutcher-Moore Co. No. 5 fee, Sec. 19-9s-sec. 23-10s-4w. Sh. 9,736 ft.: cmtd [illegible] in. csg. 8,888 ft.; T.D. 10,854 ft.; fsg.

Gueydan—Acadia Parish

Burton-Sutton Oil Co. No. 1 Valerean-Simon, Sec. 37-11s-1w. R.U.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s 12w. T.D. 4,153 ft., salt; P.B. 3,987 ft 7-in. csg. 3,827 ft.; bailed dry; abd.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23 21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft., salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. 3,504 lbs. press.; reset screen; tstg.

Valentine—La Fourche Parish

Wm. Helis et al No. 4 Valentine Sugars, Inc., Sec. 2-17s-20e. R.U.
Pan American Prod. Co. No. 2-A Community, Sec. 58-17s-20e. Loc.
Pan American Prod. Co. No. 2 Ducos-Abriabet, Sec. 10-17s-20e. Drlg. sh. 2,036 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 2 Buras Lve. Dist., Sec. 23-21s-30e. R.U.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Fontenot, Ludeau-Tate Unit, Sec. 46-3s-2e. T.D. 8,989 ft., oil sd.; tstg.
Continental Oil Co. No. 2 Haas, Sec. 44-3s-2e. Drlg. sh. 6,415 ft.
Continental Oil Co. No. 2 Tate, Sec. 44-3s-2e. Drlg. sh. 6,200 ft.
Continental Oil Co. No. 2 Vidrine Deville, Sec. 46-3s-2e. Drlg. sd. 4,595 ft.
Texas Co. No. 1 fee, Sec. 27-3s-2e. Drlg. sh. 1,639 ft.
Texas Co. No. 2 fee, Sec. 27-3s-2e. Loc.

West Gueydan—Vermilion Parish

Pure Oil Co. No. 1 Vermilion Irrig. Co., Sec. 41-12s-2w. Drlg. sh.&L. 8,872 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 O. Miller, sec. 7-9s-5w. T.D. 8,918 ft.: 7-in. csg. 8,918 ft.; flwd. 380 B.O.P.D.: ¼-in. ck.; started making S.W.; killed; reperf. csg.; 8,906½-08½ ft.; 163 B.O. plus 14% S.W.; ¼-in. ck.

S. LOUISIANA WILDCATS

Acadia Parish

Atlantic Ref. Co. No. 1 Klumpp, Sec. 12-7s-2w. T.D. 8,705 ft.; 7-in. csg. 8,698 ft.
P. D. Freeman No. 2 J. E. Settig, Sec. 17-7s-1w. S.D. 894 ft.; T.A.
Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.
Western Gulf Prod. Co., Sec. 16-10s-1w. Loc.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farwell Co., Inc., Sec. 79-14s-14e. Bldg. road.

Avoyelles Parish

Magnolia Pet. Co. No. 1 W. G. Bowden, Sec. 7-2s-4e. Drlg. sd.&sh. 6,811 ft.

Beauregard Parish

Humble O. & R. Co. No. 1 Powell Lbr. Co., Sec. 25-3s-8w; (deep core test). T.D. 7,621 ft.
Republic Prod. Co. No. 1 Lutcher Moore Lbr. Co., Sec. 14-7s-12w. R.U.

Calcasieu Parish

Sun Oil Co. No. 2 Lutcher-Moore, sec. 12-8s-13w. T.D. 2,019 ft.; 13⅜-in. csg. 1,996 ft.; drlg. sh. 7,850 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.

Cameron Parish

Federal Roy. Co. No. 1 State-Calcasieu Lake, Sec. 34-13s-8w. T.D. 1,661 ft.; abd.
Humble O. & R. Co. No. 2 K. B. Hanzen, 466 ft. S and E. NW cor. SW¼ Sec. 9-12s-6w. Drlg. sh. 11,473 ft.
Union Sulphur Co. No. 3 Miami Corp., Sec. 33-12s-8w. (Willow Lake area). Drlg. sdy. sh. 9,840 ft.

Concordia Parish

Benedum & McCormick No. 1 L. P. Allen, Sec. 35-5n-8e. Abd.

La Fourche Parish

Texas Co. No. 1 La Terre, Sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft.; T.D. 11,135 ft.; run short string of 5-in. csg. to bttm.
Texas Co. No. 1 State-Catfish Lake, Sec. 77-19s-21e. Loc.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Drlg. sdy. sh. 7,247 ft.
W. T. Burton No. 1-B R. E. E. de Montluzin, Sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain. Twp. 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,025 ft.; drlg. sdy. L. 8,080 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, Sec. 16-4n-1e. Drk.
E. F. Kalb et al No. 1 Lee Lbr. Co., Sec. 9-5n-3e. S.D. 140 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. Drlg. sd. 129 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. Drlg. wtr. well.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, Sec. 97-11s-7e. Cg. sdy. L. 10,675 ft.

St. Landry Parish

Herton Oil Co. et al No. 1 Thistlephlite Lbr. Co., Sec. 60-4s-4e. Drlg. sh. 9,380 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Hazel Burdin, Sec. 15-14s-12e. Cg. sh. 7,808 ft.
Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. Drlg. sh. 9,327 ft.
Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.: T.D. 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,175 ft.; drld. out to bttm.; using hole for geophysical work.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, sec. 33-7s-15e. Drk.

Terrebonne Parish

Shell Pet. Corp. No. 1 Peters, Sec. 73-18s-18e. T.D. 10,649 ft.; D.S.T. failed.
Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; drlg. sdy. sh. 8,130 ft.
Texas Co. No. 2 State-Coon Point, Twp. 23s-14e. Loc.

Vermilion Parish

Stanolind O. & G. Co. No. 2 F. Stovall, Sec. 88-14s-3e. R.U.

SOUTH MISSISSIPPI

George County

Ryan & Anderson No. 1 J. J. Newman, Sec. 9-1s-8w. S.D. 6,735 ft.

Lamar County

South Miss. Pet. Co. No. 1 Pearly Morris, Sec. 4-2n-14w. S.D. 3,023 ft.; abd.

Wilkinson County

La. Crusader Oil Co. No. 2 Miss-Wiss Tmbr. & Ld. Co., Sec. 35-4n-1w. Dig pits.

TEXAS

Week Ending October 8

GULF COAST FIELDS

Hastings Field—Brazoria County

W. L. Goldston No. 3 fee, B.B.B.&C. Sur. Drlg. sh. 1,236 ft.
Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.
Stanolind O. & G. Co. No. 12 Grote, Wm. Henry Sur. Drlg. sd. 3,710 ft.
Stanolind O. & G. Co. No. 8 Matsushita, H. Stevens Sur. Drlg. L. 2,855 ft.
Stanolind O. & G. Co. No. 8-C Moore, R. A. Magee Sur. T.D. 6,080 ft.; run csg.

Old Ocean—Brazoria County

Commerce Oil Co. No. 1 S. M. Patterson, Polly & Chance Sur. Loc.
Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. Cg. sh. 9,312 ft.
Harrison & Abercrombie No. 2 Chenault, C. Breen Sur. Drlg. sh. 1,860 ft.
Harris & Abercrombie No. 1 Fidelty O. & R. Co., Polly & Chance Sur. Drlg. sh. 8,212 ft.
Harrison & Abercrombie No. 1 Fisher, and Larsen, C. Breen Sur. Drlg. sdy. sh. 9,815 ft.
Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. Loc.
Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. R.U.

Sandy Point—Brazoria County

Stanolind O. & G. Co. No. 4 Sharp, C. S. Gorbett Sur. No. 12. Loc.

West Columbia—Brazoria County

Fros & Dunnam No. 2 Masterson, G. Tennille Sur. Drlg. sh. 4,647 ft.
General Crude Oil Co. No. 1 Campbell Est., J. H. Bell Sur. Drlg. sh. 2,835 ft.
Hogg Bros. No. 4 fee, M. Varner Sur. Drlg. sh. 3,366 ft.
Texas Co. No. 28 Abrams, G. Tennille Sur. Drlg. sd.&L. 3,630 ft.
Texas Co. No. 4 Rebecca Goldman, G. Tennille Sur. Drlg. sd.&L. 2,156 ft.
D. M. Wallace No. 3 Smith, G. Tennille Sur. Drlg. 1,836 ft.

Seabreeze—Chambers County

Seabreeze No. 4 Acom, H.T.&B. Sur No. 103. T.D. 8,459 ft.; 7-in. csg. 8,459 ft.
Sun Oil Co. No. 1 Tate, H.T.&B.R.R Sur. T.D. 8,634 ft.; P.B. 2,000 ft. to sdtrk. at 2,609 ft.; drlg. sh. 3,572 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay). Bldg. drk.

Hitchcock—Galveston County

N. W. Hunter No. 3 Aarco O. & G. Co., A. Burke Sur. T.D. 5,153 ft.: tstd. oil &S.W.; P.B. 1,149 ft.; sdtrkd.; cd. oil 5,164-71 ft.; T.D. 5,171 ft.; 5½-in. csg. 5,165 ft.; flwg. oil and S.W.
Maco Stewart No. 7 fee, J. Spillman Sur. R.U.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No. 1 C. Ehrkardt, H. Simmons Sur. R.U.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 Emma Helberg, J. Reinerman Sur. R.U.
Jack Frazier No. 2 Hogg Bros., J. Reinerman Sur. 10¾-in. csg. 2,505 ft.; drlg. sh. 4,912 ft.
Jack Frazier No. 1 Lackner, H. Reinerman Sur. T.D. 9,038 ft.; 5½-in. csg. 8,328 ft.; perf. csg. 8,085-95 ft.; flwd. 25 bbls. fluid per hr., 14% brksh. wtr.; killed; perf. csg. 8,082-94 ft.; I.P. 476 bbls., 39-grav. oil per day, plus 12% S.W. through ¼-in. ck.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Tide Water Asso. Oil Co. No. 1 H. H. Ford, J. Reinerman Sur. Drlg. sh. 5,326 ft.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 2 J. P. Dawson. 9⅝-in. csg. 1,228 ft.
Amerada-Stanolind O. & G. Co. No. 1 Emmott, J. Waugh Sur. Drlg. sh. 4,927 ft.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 3 Smith, J. Waugh Sur. Loc.
Bridwell O. & G. Co. No. 1 Gibson, Geo. Avers Sur. T.D. 6,860 ft.; 5½-in. csg. 6,860 ft.; perf. csg. 6,851½-55½ ft.; comp.; no ga.
Bridwell Oil Co. No. 2 Gibson, G. Ayers Sur. Drlg. sh. 1,315 ft.
P. C. Bundy No. 1 Neri, G. Williams Sur. 10¾-in. csg. 1,200 ft.; cg. sh. 6,773 ft.
E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. Loc.
Housh & Thompson No. 1 Bennett O. & G. Co., G. S. Reid Sur. Drlg. sh. 4,213 ft.
Moore & Ahern No. 2 Whitehead & Rash, W. S. Powell Sur. Drlg. sh. 5,735 ft.
Sinclair Prairie Oil Co. No. 1 W. W. Goodykoontz, Wiley S. Powell Sur. 9⅝-in. csg. 1,321 ft.
Stanolind O. & G. Co. No. 1 Schumacker, J. Daswell Sur. T.D. 7,940 ft.; 7-in. csg. 7,252 ft.; perf. csg. 7,201-06 ft.; flwd. S.W. and gas; killed to recomp.
H. E. Williams et al No. 1 Deacon, M. McFarland Sur. Loc.
H. E. Williams No. 3 Stern, G. Williams Sur. T.D. 6,838 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 13 Beamer, T. Choate Sur. Drlg. sh. 5,074 ft.
Humble O. & R. Co. No. 5 Herman Hospital, T. Choate Sur. Drlg. 5,139 ft.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 8 Kiesling, T. Choate Sur. Drlg. 4,620 ft.
Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.
Humble O. & R. Co. No. 1 West, T. Choate Sur, T.D. 6,045 ft.; 5½-in. csg. on bttm.

Cordele—Jackson County

Magnolia Pet. Co. No. 3 Drushel, L&G. N.R.R. Sur. Cg. sh. 2,660 ft.
H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

West—Jackson County

Magnolia Pet. Co. No. 4-A West, R. Musquiz Sur. Recvd. 300 ft. oil-cut drlg. mud; D.S.T. 5,076-98 ft.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 3 McFaddin, S. A. Pace Sur. 10¾-in. csg. 1,532 ft.; cg. sh. 5,280 ft.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. T.D. 7,726 ft.; tstd. oil on D.S.T. 7,711-21 ft.; P.B. 7,725 ft., flwg. 36 obls. dist. daily through ¼-in. ck.; killed well; perf. csg. 7,717-20 ft.; flwg. 16 B.P.D.: ¼-in. ck. killed with wtr.; P.B. 7,698 ft.; P.B. 7,721 ft.; fsg.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B. Blackman Lge. T.D. 8,675 ft.; 7-in. csg. 8,605 ft.; pmpg. wtr. into hole to kill press. in No. 3 Broussard.

Hardin—Liberty County

Atlantic Ref. Co. No. 1-B Johnston-Finley, H. B. Johnston Sur. Drlg. sh. 4,610 ft.
Geo. Echols No. 2 West, H. B. Johnston Sur. R.U.
N. C. Ginther No. 1 West, A. B. Hardin Sur. 9⅝-in. csg. 1,837 ft.
Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. Drk.

Bay City—Matagorda County

Hamman Explin. Co. No. 3 Crooker, E. Hall Sur. Drlg. sh. 8,476 ft.

McCrosky—Matagorda County

Pierce Est. No. 5 fee, David Fenton Lge. Cd. oil sd. 6,603-04 ft.; tstg.

North McFaddin—Matagorda County

Ohio Oil Co. No. 1 Carlson, I.&G.N. Sur. No. 2. R.U.

Orange—Orange County

Continental Oil Co. No. 17 Chesson, Wm. Dyson Sur. 10¾-in. csg. 1,014 ft.
Gulf Oil Corp. No. 1 La Fleur, Wm. Dyson Sur. R.U.
Gulf Oil Corp. No. 2 Orange Natl. Bnk., Wm. Dyson Sur. Drlg. sh. 2,350 ft.
Red Bank Oil Co. No. 3 Michel, Wm. Dyson Sur. Drlg. sh. 4,000 ft.
S. J. Ryan et al No. 1 McGill, Wm. Dyson Sur. S.D. 6,356 ft.
Ryan & Andrews No. 1 Peveto, Wm. Dyson Sur. Drlg. sh. 3,975 ft.

Segno—Polk County

J. K. Dorrance No. 4-A Wing, I.&G.N. Sur. No. 14. T.D. 7,830 ft.; recvd. stk. D.S.; fsg.
Humble O. & R. Co. No. 9-B Kirby, M. Victor Sur. T.D. 8,736 ft.; 7-in. csg. 8,200 ft.; perf. csg. 8,103-10 ft.; swbg.; well will not flow.

Spurger—Tyler County

Republic Prod. Co. No. 13 Hurd, N. Hurd Sur. Drlg. sh. 5,410 ft.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Normandie Oil Co. No. 1 M. A. Ramsey, H.T.&B. Sur. Drlg. sh. 3,107 ft.
Texas Co. No. 1 E. F. Davis, Sec. 36, T. Spraggins Sur., 3,900 ft. SE of Manvel field. 10¾-in. csg. 1,314 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
F. A. Gillespie et al No. 1 Kirby Lbr. Co., Chambers Co. Sch. Ld. Sur. T.D. 6,523 ft.; 5½-in. csg. 6,471 ft.; perf. csg. 6,415-34 ft.; flwg. oil and wsh. wtr.
Salt Dome Oil Corp. No. 1 Ogden, E. Douthit Sur. 10¾-in. csg. 1,640 ft.; cg. S.W. sd. 7,570 ft.

Galveston County

F. J. Anderson No. 1 L. Lobit, Lot A, Subd. No. 6, J. M. Perry and E. M. Austin Lges. 10¾-in. csg. 2,520 ft.; drlg. sh. 8,116 ft.
Sun Oil Co. No. 1 R. U. Humphrey, Ruben Barrow Sur. Bldg. road.

Harris County

Continental Oil Co. et al No. 1 J. J. Sweeney, Sec. 5, W.C.R.R. Sur. 10¾-in. csg. 1,026 ft.; drlg. sh 5,212 ft.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jackson County

Chapman Minerals Corp. No. 1 Bennett ranch, Valentine Garcia Sur. Loc.
Texas Co. No. 1 J. F. Wood, John D. Newell Sur. Drlg. sd. 6,084 ft.

Jefferson County

British American Oil Prod. Co. et al No. 1 Gladys City, J. A. Veatch Sur. (SW flank of Spindletop). Drlg. sh.& L. 1,425 ft.
I. E. Harwell No. 1 State, Gulf of Mexico.

T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 1 M. C. Todd, Wm. Carr Sur. Loc.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. 10¾-in. csg. 700 ft.; cg. sh. 6,569 ft.
Jack Frazier No. 1 Chase Natl. Bnk., D Garrett Sur. 10¾-in. csg. 1,700 ft.; drlg. sh. 6,786 ft.
G. G. M. Oil Co. No. 1 Floyd Oil Co., Lot 62, W.C.R.R. Sur. No. 11. 10¾-in. csg. 464 ft.; T.D. 6,617 ft.; abd.
Mills Bennett Prod. Co. No. 1 Victoria Griffin, Archibald Lge. 10¾-in. csg. 1,512 ft.; drlg. sh. 5,857 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. Cg. sh. 7,288 ft.

Waller County

Stanolind No. 1 Robertson, H.&T.C. Sur., Sec. 123. T.D. 7,500 ft.; 5½-in. csg. 7,400 ft.; perf. csg. 7,315-25 ft.; tstg.
Stanolind O. & G. Co. No. 1 Seymour, H.&T.C. Sur. No. 80. 9⅝-in. csg. 2,497 ft.; drlg. plug.
Stanolind O. & G. Co. No. 1 J. J. Sweeney Est., T. S. Reese Sur. No. 110, 2,640 ft. E of No. 1 Freeman in Katy gas field. Drlg. sdy. sh. 6,678 ft.
Stanolind O. & G. Co. No. 1 Young, T. S. Reese Sur. No. 124. 13⅜-in. csg. 136 ft.; T.D. 7,500 ft.; 5½-in. csg. 7,433 ft.; perf. csg. 7,340-60 ft.; comp. for gas well.

Wharton County

Humble O. & R. Co. No. 1 Duncan, A. Edgar Sur. Drlg. sh.&L. 2,115 ft.
Western Gulf Pet. Co. No. 1 Rust, B. Johnson Sur. T.D. 6,120 ft.; abd.

S. W. TEXAS WILDCATS

Aransas County

Houssh-Thompson, Inc., et al No. 1 Kent-Crane, Wm. M. Carper Sur. 10¾-in. csg. 960 ft.; drlg. sh. 7,153 ft.

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. Cg. 1,556 ft.

Bastrop County

Ira Brown No. 1 T. W. Bailey, John Crutchfield Sur. No. 12. Loc.
R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. Drlg. sh. 2,046 ft.
A. H. Tarver No. 1 Rivers, Jonathan Burleson Sur. No. 25. Drlg. sh. 1,670 ft.
Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. D.S.T. 7,088-23 ft.; recvd. 1 thrib. of mud; S. S.O.; drlg. L. 7,147 ft.

Bee County

Aid et al No. 2 Imogene Hall, Geo. Kerr. Sur. Drlg. sh. 2,630 ft.
J. R. Bunn and J. G. Mayo No. 1 Sparkman, Asa Walker Sur. Spd.
W. D. Walton et al No. 1 Ray, A. S. Mangum Sur. 10¾-in. csg. 156 ft.; cg. sh. 3,540 ft.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.

Bexar County

M. S. Blackburn No. 1 Miller, Thos. Barwick Sur. No. 324. Drlg. 283 ft.; S.O. 151-225 ft.
Lewis Ridder No. 1 fee, Jose Maria Baerera Sur. Loc.
B. Soltner No. 1 fee, Stephen Jett Sur. Drlg. 60 ft.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; S.D. 501 ft.

Caldwell County

R. H. Dye No. 1 Voight, Wm. Watkins Sur. T.D. 1,990 ft.; to D.D.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. Drlg. sh. 8,417 ft.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. S.D. 150 ft.

Duval County

W. H. Appell No. 1 Hagist, B.S.&F. Sur. No. 265. Drk.
Atlantic Ref. Co. No. 1 Garcia, Sec. 409. T.D. 5,259 ft.; abd.
Joe Gier and Smith & Storey No. 1 W. R. Peters, A.B.&M. Sur. No. 175. Drlg. 1,569 ft.
Frank Gravis No. 2 Schallert, Seale, Morris & Seale Sur. No. 255 (Palangana salt dome). S.D. 3,425 ft
Magnolia Pet. Co. No. 1 Duval Co. Rch. Co., E. Barrera Sur. No. 48. Loc.
E. J. Purl No. 1 Corkill, J. Poitevent Sur. Drlg. sh. 3,126 ft.
Stewart and Nye No. 1 Welder J. Poitevent Sur. No. 213. T.D. 1,557 ft.; 7-in. csg. 1,543 ft.; cg. 2,670 ft.
R. A. Thompson No. 1 Parr Julia Rogers Sur. No. 118. T.D. 3,991 ft., sh.; core ahead.
W. A. Wagner No. 1 D. J. Welkel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 1 Schley, Jos. Travalder Sur. No. 174. 15-min. D.S.T. 3,520-51 ft. tstd. no press.; recvd. 175 ft. mud with oil odor and 180 ft. S. W.; 15-min. D.S.T. 3,595-3,617 ft. tstd. 45 ft. of mud, S.S.O. recvd 2,500 ft P.L.O.; D.S.T. 4,720-85 ft.; recvd. 396 ft. sulf. wtr.; D.S.T. Edw. L. 5,271-5,304 ft.; P.B. to 4,800 ft.; 7-in. csg. 4,699 ft.; swbg. 1½ B.O.P.H. plus small amt. of wash wtr. and acd.
Geo. Smith No. 1 Berry, T.C.R.R. Sur. No. 1. R.U.

Goliad County

Steinberge Pet. Corp. No. 1 Albrecht, T. Hancock Sur. Drlg. 2,112 ft.; no report.
Sun Oil Co. No. 1 Lee Homer, John Payne Sur. Cg. 7,615 ft.

Gonzales County

Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 40 ft.
John Hueners et al No. 1 Bauer, R. E. Brown Sur. Drlg. 120 ft.

Guadalupe County

R. Hamil No. 1 E. J. Zuehl, Vincente Duran Sur. S.D. 625 ft.
A. D. King No. 1-A Rosenbrock, Vincente Duran Sur. No. 4. Drlg. 1,270 ft.
Marts and Beaven No. 1 Glenwinkle, Wakefield and Stewart Sur. Drlg. sh. 2,136 ft.
Pegg Bros. et al No. 3 Maierhoffer, L. H. Peters Sur. No. 50. Drlg. 222 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. Drlg. 1,340 ft.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car, Hidalgo Co. Canal Subd., Lot 8, Blk. 8. Drlg. sh. 6,812 ft.
Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). T.D 5,860 ft.; cmtd. 7⅝-in. csg. 5,847 ft (protection string); drlg. sh. 5,616 ft.
Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5½-in. lnr. set 8,369-9,618 ft.; tstd. S.W. 9,420-30 ft.; made sqze. job; P.B. 9,390 ft.; perf. csg. 9,372-80 ft.; swbd. S.W. and gas; perf. csg. 9,347-52 ft.; tstd. S.W.; perf. csg. 9,255-60 ft.; tstd. S. W.; perf. csg. 9,065-70 ft.; tstd. S.W.; perf. csg. 8,990-9,000 ft.; tstd. S.W.; perf. csg. 8,920-25 ft.; tstd. S.W.; perf. csg. 8,845-50 ft.; flwd. 24 bbls., 51-grav. dist. per day; ⅝-in. ck.; killed to reperf.
Wheelock & Collins No. 1 Temple Lbr Co., Lino Cavos, Porc. 57-A. Drlg. sh. 7,453 ft.

Jim Hogg County

Humble O. & R. Co. No. 3 Anna Kelsey Bass, San Raphel gr., 3,732 ft. N of Kelsey field discovery well. R.U.
Navarro Oil Co. No. 1 Guerra, Santa Teresa gr. (7,000 ft. SW discovery, Kelsey field). Loc.

Jim Wells County

Humble O. & R. Co. No. 1 Ben Belitz, Staples Sur. 10¾-in. csg. 1,042 ft.; recovered 85 ft. oily mud; D.S.T. 3,930-50 ft.; drlg. sh. 5,575 ft.
Magnolia Pet. Co. No. 1 Moreno, La Trinidad gr. Drlg. sh. 1,060 ft.
Magnolia Pet. Co. No. 1 Romano, V. de Garcia Las Animas Sola gr., 1,126 ft. E of discovery well. Cd., sd., gas odor, 6,421-26 ft.; drlg. sh. 7,620 ft.
Presnall & Tsesmelis No. 1 Hoffman, Marcellino Lopez Sur. Drlg. sh. 4,212 ft.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,318 ft.; fsg.
Transwestern Oil Corp. No. 1 B. H. Dunlap, Sur. 179-181 (1½ mi. SW East Premont field). 18⅝-in. csg. 485 ft.; T.D. 5,107 ft.; sdtrkd.; T.D. 5,194 ft.; 8⅝-in. csg. 5,168 ft.; drlg. sh. 5,568 ft.

Kendall County

Carpenter No. 1 Seidensticker, A. Rodriquez Sur. No. 257. Drlg. 160 ft.
Millican and Norman No. 1 Werner, J. F. Torrey Sur. T.D. 909 ft.; bailed oil; 5½-in. csg. 907 ft.; T.D. 1,002 ft.; tstg. pmpg. 8 B.O. and 18 bbls. sulfur wtr. per day.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. T.D. 627 ft.; fsg.

Kerr County

H. C. Starkev No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 100 ft.

Kimble County

Plateau Oil Co. No. 1 E. E. Bolts, S. Jones Sur. T.D. 1,901 ft.; pmpg.; showing little oil.
Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. S.D. 815 ft.
Plateau Oil Co No. 1 Hunger J Bujnor Sur. T.D. 1,600 ft.; sdtrkd.; drlg. by junk.

Kinney County

C. B. Wardlaw No. 1 Standart, Meilton Valdez gr. S.D. 1,290 ft.; W.O. large rig.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. T.D. 9,350 ft.; sdtrkd. 8,268 ft.; drlg. sh. 8,356 ft.

La Salle County

Lake-Tobian Oil Co. No. 1 O'Connor ranch. Blk 35. Bland & Nelson subd. S.D. 90 ft.; (corrected); W.O. D.P.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). Spd. and S.D.
Midway Oil & Roy. Co. No. 2 Michalcik, Jack Sur. 10¾-in. csg. 466 ft.; S.D. 3,625 ft.
Navarro Oil Co. et al No. 1 Brom, Wm. Strode Sur. Loc.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. Drlg. 4,836 ft.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J Pierce Sur. 10¾-in. csg. 20 ft.; cg. 2,806 ft.
R. H. Feltner No. 1 Reed, I.&G.N. R.R Sur 15. R.U.
Goy E. Gaines et al No. 2 Great Southern Life Ins. Co., John Buchanan Sur. No. 37. T.D. 1,886 ft.
Frank Gravis and Mintex Dev. Co. No. 1 Northwest Inv. Co., Uel Ritchie Sur. No. 133. Est. T.D. 3,000 ft.; blew in making S.W.&G.; rmg. to bttm.
Hanna et al No. 2 West, C. O. Ragland Sur. Cg. 3,960 ft.; no report.
Holland Oil Co No. 1 Wallace, Cameron Co. Sch. Ld. Sur. S.D. 200 ft.; (cor.).
Wellington Oil Co No. 1 Sanger T.T.R. R. Sur. 349. T.D. 3,523 ft.; abd.
Wallace & Jones No. 1 Burrows, Eneas Smith Sur. Drlg. sh. 2,802 ft.

McMullen County

Barbara Oil Co. No. 1 Edrington, A.B.& M. Sur. No. 79. R.U.
W. T. Kirby No. 1 Chylek, J. M. Hernandez Sur. T.D. 1,210 ft.; D.D.
Mills Bennett Prod. Co. No. 2-C Nueces Ld. & Lvstk. Co., Theo Roziene Sur. No. 168. Drlg. 820 ft.
Scarborough & Bigiane No. 1 Matula Emmitt, Jas. Garner Sur. No. 6. T.D. 880 ft.; C.O.
Wm. Spice, Jr., No. 1 Edrington, A.B.& M. Sur. 57 (6 mi. E. Loma Alto). T.D. 2,519 ft.; flwg. est. 25 to 50 B.P. D.; 90 lbs. press.; tstg.
Taylor Ref. Co. No. 1 Nueces Ld. & Lvstk. Co., B.S.&F. Sur. No. 115. Loc.

Maverick County

L. M. Lockhart No. 1 Ashbrook, W. J. Phillips Sur. No. 83. T.D. 4,042 ft.; abd.
Wellington Oil Co. and Humble O. & R. Co. No. 1 Indio Cattle Co., Antonio Revas gr. Drlg. sh. 2,096 ft.

Medina County

J. W. Cromwell No. 1 J. W. Tondre, 1,-J. Rogers Sur. T.D. 1,250 ft.; P.B. 1,080 ft.; cmtd. csg. 1,021 ft.; shot 1,024-80 ft.; T.D. 1,336 ft.; S.D.; abd.
A. D. Gaston No. 1 Rogers, Henry Wilson Sur. Drlg. 200 ft.; no report.
Whitefield and Draper No. 1 Ulbrich, Francis Hoffman Sur. No. 204. R.U.
Ziegler et al No. 1 Wiemers, F. Thurmm Sur. S.D. 905 ft.

Nueces County

Phillips Pet. Co. No. 1 Masten, Blk. 146, Delores I. & A. Co. Sur. Cg. 5,369 ft.
Texas Co No 1 E. Little et al. Wm. Little Sur. 10¾-in. csg. 1,174 ft.; drlg. sh. 7,450 ft.
Union Prod Co No. 1 Minnie Brown (Agua Dulce area). Drlg. sh. 11,469 ft.

Refugio County

Darby Pet. Co. No. 1 Rooke, J. M. and G. Cobian Sur. R.U.
Geophysical Service Co. No. 1 Spaulding, Sec. 3, Aldrete Sur. T.D. 5,920 ft.; W.O.C.
Geophysical Service Co., Inc., et al No. 3 Rooke (LaRosa field), Jose Miguel Aldrete 6¼ Lge. Flwd. oil and gas; D.S.T. 5,890-5,902 ft.; T.D. 5,920 ft.; tstg.
J. W. Heard et al No. 1 Hudson, Estaben Lopez Sur. Drlg. 2,610 ft.
Rutherford Oil Corp. No. 1 H. A. Schirmer, Sec. 1, Aldrete Sur. Cg. sdy. sh. 5,583 ft.

San Patricio County

Frank Grote et al No. 1 F. G. Carlock, Eliz. Tally Sur. A-261. 10¾-in. csg. 1,119 ft.; drlg. 5,312 ft.
Illinois Pet. Co. No. 1 Wilson, Blk. 9, J. J. Welder Sur., Coleman Fulton subd. T.D. 5,915 ft.; fsg.

Starr County

Circle Oil Co. No. 1 Sabas Olivarez, C. C.S.D.&R.G.N.G. Sur. No. 241. M.I.M.
Hagan and Stewart Oil Co. No. 2 Salinas, La Sarrotosa Antonio Canales Salinas Sur. T.D. 1,709 ft.; I.P. 1,250,000 ft. gas; ⅝-in. ck.; T.P. 475 lbs.; C.P. 500 lbs.
Magnolia Pet. Co. No. 1 Guerra, Santa Cruz gr. (LaReforma field), 1,900 ft. SW of discovery well. T.D. 5,945 ft.; 7-in. csg. 5,940 ft. (cor.); flwg. unestimated amt. of gas and dist.; 5/32-in. ck.
Sun Oil Co. No. 1 A. Olivarez, C.C.S.D. &R.G.N.G. Sur. No. 239 (Sun field). Cg. sh. 4,595 ft.
Sun Oil Co. No. 1 Speer, Sec. 274 (1 mi. SW of discovery well). Drlg. sdy. sh. 4,190 ft.

Travis County

L. G. Priest No. 1 Mazock, J. M. Leavy Sur. No. 5. S.D. 855 ft.; abd.
W. P. and O. A. Wolter No. 2 Johnston, Jas. Burleson Sur. S.D. 300 ft.

Webb County

Gage and Dawson No. 1 Bruni Est., H. Adams subd. of M. Arispe gr., Sec. 10. S.D. 2,600 ft.
W. H. Holland No. 1 Bruni, J. V. Borrego gr., C Blk. 76. El Ranchito pasture. R.U. and S.D.; T.A.
O. W. Killam No. 1 A. M. Bruni, Alberca De Arriba gr. T.D. 2,272 ft.; abd.
Superior Oil Co. of Calif. No. 1 E. A. De Spain, 10 mi. N of Oilton. 10-in. 60 ft.; T.D. 2,855 ft.; abd.

Williamson County

F. J. Anderson No. 1 Teichelman, Absalam, Jett Sur. T.D. 2,470 ft.
Fritz Fuchs No. 1 Cain, T. J. Bird Sur. R.U.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 3,012 ft. for wtr.

Zapata County

Kirkwood and Morgan No. 1 Flores, G. Flores Sur. 240. Loc.

EAST TEXAS

(Border Counties)

Cass County

Bateman Drlg. Co. No. 1 Eliza Jaynes, 80-ac. tr., Ambrose Douthet Sur. Hill sd. 6,120-36 ft.; S.D. 6,505 ft.; S.W.
Bay Oil Corp. No. 6 Cobb, G. Crowder Sur. 5½-in. csg. 6,052 ft.; T.D. 6,098 ft.; tstg.
Harry Hanbury No. 1 Echols et al, SE cor. Echols tr., Wm. Mayes Sur. Tstd. S.W. and S.O. 5,987 ft.; P.B. 5,987 ft and top Young sd. 5,998 ft.; set 58 ft. of 4½-in. csg. 5,998 ft.; T.D. 6,000 ft.; tstg.

Harrison County

F. H. Barnwell No. 1, Luther Hope Sur. Set 12-in. csg. 50 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1-B Braden Unit, Devalt Sur. R.U.
Ark.-La. Gas Co. No. 1 Hussey, Chas. Lockhart Sur. Top anhy. 5,275 ft.; T. M.A. 5,540 ft.; drlg. anhy. 5,699 ft.
Gulf Oil Corp. and Ohio Oil Co. No. 1 H. Davis, 30-ac. tr., Hanks Sur. 13⅜-in. csg. 131 ft.; drlg. anhy.&sh. 5,490 ft.
Hollandsworth Drlg. Co. No. 2 Davis, Wm. Smith Sur. Drlg. L.&sh. 3,806 ft.
Illinois Oil Co. No. 2 Hale, John Hanks Sur. R.U.
Shell Pet. Corp. No. 1 Fant, Coy Sur. Drlg. sh.&L. 4,741 ft.
Texas Co. No. 1 Braden, J. M. Fitzgerald Sur. Drlg. anhy.&sh. 5,241 ft.
Texas Co. No. 2 Braden, Jos. M. Fitzgerald Sur. Set 9⅝-in. csg.; rmg. 2,952 ft.
Wrather & Lapin No. 1 Davis, Wm. Smith Sur. Drlg. L.&sh. 4,136 ft.

Marion County—Other

Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. T.D. 2,394 ft.; swbd. dry; shot with 2 qts. nitro at 2,334 ft.; tstd. dry; prep. shoot 2,263-2,334 ft.
Carroll & Tooke No. 2 Fitzgerald, N. Gumpton Sur. T.D. 1,022 ft.; tstg.
Geyer Oil Co. No. 6 Vincent, C. Davenport Sur. T.D. 2,408 ft.; tstd. csg. and S.D.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; D.S. stk. 11,303 ft.; set 7-in. csg. 9,100 ft.; 300 ft. D.S. in hole.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. D.S. stk.; T.D. 5,644 ft.; set whpstk. 4,710 ft.; prep. set 2nd whpstk. at 1,710 ft.

Shelby County

Redditt & Gray No. 1 Pickering Lbr. Co., Childers Sur. Set surf. csg.; S.D.

WEST TEXAS WILDCATS

Andrews County

Fuhrman Pet. No. 1 G. O. Ashton, sec. 12, Blk. A-42, P.S.L. Sur. Tstg. 4,492 ft.
Humble O. & R. Co. No. 1-G University, Sec. 18, Blk. 4, University Sur. Tstg. 4,942 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of south end of Fuhrman pool. P.B. 4,770 ft.; C.O. 4,500 ft.; est. 20 B.O.P.D.
Texas Co. No. 1-H University, Sec. 4, Blk. 14, Univ. Sur. Drlg. 3,850 ft.
J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. R.U.S.T. 4,100 ft.
L. H. Wentz No. 1-L W. F. Cowden, Sec. 3, Blk. 43, T.&P. Sur. Loc.
H. C. Wheeler No. 1 White-Shelton Sec. 18, Blk. 36-A, P.S.L. Sur. Drlg. 3,660 ft.

Cochran County

Magnolia Pet. Co. No. 1 Della Wright Lab. 7. Lge. 96. Mills Co. Sch. Lds Sur. Drlg. 4,735 ft.
Texas Co. No. 1 D. S. Wright, Lge. 115, Lab. 23, Potter Co. Sch. Lds. P.B. 4,910 ft.; swbd. 20 B.O. 8 hrs.; D.&A. 4,939 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 30, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Culberson County

Harry J. W. Niehaus No. 1 fee, Blk. 109, Sec. 13, P.S.L. Sur. 1,800-ft. test. S.D. 2,500 ft.
Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D.O. 2,770 ft.; prep. drill deeper.

Ector County

Fields et al No. 1 Owenwood, sec. 6, Blk. 44, T.&P. Sur. Prep. drill plug 4,170 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3, 571 ft.

Gaines County

Atlantic Refg. Co. No. 1 A. J. & J. Parker, Sec. 264, Blk. G. W.T.R.R. Sur. Drlg. 5,025 ft.
H. J. Brown No. 1 A. L. Wasson, Sec. 51, Blk. AX, P.S.L. Sur. W.O.C. 2,138 ft.
Devonian Oil No. 1 King Est., Sec. 6 Lge. 305, Dawson C.S.L. Sur. Drlg. 5,219 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 7,635 ft.

Hockley County

Gulf Oil Corp. No. 2 Mallett, Lge. 34, Labor 25. Swbg. 87 B.O. 6 hrs.
Sid W. Richardson No. 2 Slaughter, Lge. 39, Lab. 58, Maverick Sur. W.O. flwd 100 B.O.P.D.; P.B. depth of 4,978 ft.; 16 B.O.P.H.
Snowden & McSweeney No. 1 A. A. Slaughter, Zavalle C.S.L. Sur., Lge 35, Lab. 74. Drlg. plug 4,747 ft.; T.D. 4,950 ft.
The Texas Co. No. 1-B Mallett Lands, Lab. 1, Lge. 52, Scurry C.S.L. Sur. Tstg. 4,860 ft.

Howard County

Anderson & Prichard No. 1 H. Hyman Est., Sec. 85, Blk. 29, W.&N.W. Sur. S.D.O. 3,032 ft.
Parten & Strickland No. 1 O'Daniel, Sec. 39, Blk. 30, T.&P. Sur. Drlg. 890 ft.
W. B. Powell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. D.&A. 3,394 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6, U.R. 5,130 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 4,415 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,742 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Tools out; drlg. up wire 1,270 ft.

Pecos County

E. B. Carruth Tr. No. 1 J. H. Tippett, Sec. 4, Blk. 194, G.C.&S.F. Sur. S.D. 30 ft.
Geo. J. Greer No. 1 Price Est., Sec. 3, Blk. 12, H.&G.N. Sur. D.&A. 1,919 ft.
J. N. Gregory et al No. 1 Humble-O'Neil, H.&G.N. Sur., Blk. 10, Sec. 74. S.D. 1,777 ft.
Helmerich & Payne et al No. 1 Dow Puckett, Sec. 66, Blk. 3, T. & P. Sur.; 3,500-ft. test. Drlg. 1,414 ft.
Humble O. & R. Co., No. 1 A. H. Robertson, Sec. 27, Blk. OW, T.C.R.R. Sur.; 4,500-ft. test. Drlg. 2,360 ft.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.C. Sur.; 2,500-ft. test. Drlg. 460 ft.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,342 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. S.D.R. 400 ft.
William No. 1 Maud S. Sanger, Sec. 10, Blk. 135, T.&St.L. Sur., 3,000-ft. test. Loc.
Union Oil & Mining Co. No. 1 First Natl. Bnk. of Ft. Stockton, Sec. 6, Blk. 9, H.&G.N. Sur. S.D. 1,760 ft.

Reagan County

John W. Emch No. 1 T.&P. Ld. Trust, Sec. 203, Blk. 1, T.&P. Sur. Drlg. 805 ft.

Reeves County

Frankley & Rice No. 1 W. A. Tunstill, Sec. 10, Blk. 56, T.&P. Sur. Est. 1,500,000 ft. gas 3,200-99 ft.
Ohio Oil Co. No. 1 Papham, Sec. 18, Blk. 54, T.&P. Sur. Drlg. 4,225 ft.

Runnels County

Castor-Koerner & Goodrich No. 1 Beddo, Subdiv. 41, T. T. Williamson Sur. No. 15½. Drlg. 1,535 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, Sec. 130, Blk. 97, H.&T.C. Sur. P.B. 2,493 ft.; S.D. 2,495 ft.

Sterling County

J. W. Sward No. 1 Brennand, Sec. 107, Blk. 2, H.&T.C. Sur. S.D.O. 3,011 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, Sec. 371, Blk. 2, H.&T.C. Sur., 12 min. N Rotan. Drlg. 5,735 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch. Sur. Fsg. 5,118 ft.
J. B. Watson No. 1 Liano, C.S.L. Sur., Sec. 16. Drlg. 666 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. S.D.; csg. 150 ft.

Val Verde County

A. W. Little No. 1 R. W. Sellers, Sec. 34, H.&G.N.R.R. Sur. 1,500-ft. test. S.D.R. 344 ft.

Ward County

Herschel M. Jaffe No. 1 Viola Meyers, Sec. 17, Blk. 32, H.&T.C. Sur. Drlg. 1,100 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Brosahara, Sec. 22, Blk. 77, P.S.L. Sur. Drlg. plug 3,238 ft.
J. R. Sharp No. 1 Sharp-Crume, Sec. 7, Blk. B-2, P.S.L. Sur. C.O.; est. 65 B.O.
J. R. Sharp No. 2 Sharp-Crume, Sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

Honolulu Oil Co. No. 1 R. M. Kendrick, Sec. 825, Blk. D, J. H. Gibson Sur. Drlg. 4,838 ft.
J. E. Mabee No. 1 N. W. Willard, Sec. 741. Loc.
Magnolia Pet. Co. No. 1 Lynn, Sec. 770. Tbg. to treat; comp.; 312 B.O.P.D.
Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743, C.&P.
S. C. Yingling et al No. 1 Nettie Barrier, Sec. 6. Fsg. drill pipe 5,500 ft.

TEXAS PANHANDLE

Collingsworth County

White No. 1 Wischamper. S.D. 2,263 ft.
Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 3,294 ft.

Floyd County

Mills Bennett No. 1 Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. S.D. 5,960 ft.

Gray County

English No. 1 Eudy. S.D. 3,977 ft.

Kent County

B. Dolman et al No. 1 C. V. O'Keefe, Sec. 50, Blk. 1. 15½-in. csg. set at 140 ft.; drlg. at 180 ft. last report.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 50 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.F. Sur., about 3 mi. N of Amarillo; 8,500 ft. test. W.O.C. 2,800 ft.; T.D. 3,649 ft.

Roberts County

Whitlock No. 1 Cunningham. Recmt. csg. 2,750 ft.

E. C. TEXAS WILDCATS

Angelina County

W. C. Atkinson No. 1 So. Pine Lbr. Co., T.&N.O. Sur. No. 14, 9 mi. SW of Lufkin. S.D. 2,544 ft.
J. C. Bonham No. 7 Cameron Lbr. Co., E. Miller Sur., 7 mi. E of Zavalla. R.U.
Ginter Bros. No. 4 Cones Hrs., J. Morin Sur., 3 mi. E of Dibol. S.D. 2,130 ft.

Cherokee County

R. Bunn Drlg. Co. No. 1 Bolin, W. A. Walter Sur., 3 mi. SE of Lone Star; 3,000 ft. E of Bunn No. 2 Bounds. Cg. oil sd. 5,005-07 ft.; made 6,248,000 ft. gas in 1 hr.; est. 80,000,000 ft. gas on open flow; killed well; to drill deeper.

Freestone County

G. Shryock No. 1 M. S. Clark, M. D. Canton Sur., 8 mi. NW of Teague. S.D. 4,000 ft.

Grayson County

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. Drlg. 1,950 ft.

Gregg County

Humble-Gulf No. 1 Porter Horton, H. G. Hudson Sur., 3½ mi. SW of Longview; 7,500-ft. test. Tstg. 7,305 ft.

Henderson County

Tide Water-Seaboard-Humble No. 1 Sadie Starr McGee, R. Acosta Sur., 3½ mi. NE of Murchinson. Loc.

Houston County

John G. Mayo No. 1 A. Warroch, J. Sheridan Sur., 1¼ mi. E of Procella. Drlg. 5,000 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.
W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D.; 3,104 ft.
J. F. McLaughlin No. 1 Wood-Nash, J. C. Cortez Sur., ¾ mi. SE of Scurry. Drk.
Tyler & Smith No. 2 Phoenix Realty Co., A. Hicks Sur., 3½ mi. W of Mabank. Tstg. 3,527 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. S.D. 30 ft.

Leon County

Lone Star Gasoline Co. No. 1 Steve Pate, D. J. Haskins Sur., 6 mi. SE of Buffalo gas area. S.I. 5,782 ft.
T. J. Tucker No. 1 Same Vane, James Webb Sur., 4½ mi. SE of Keechi. Drlg. 5,080 ft.
Wynne Drlg. Co. No. 1 H. L. Brown, Joseph Brown Sur., ¾ mi. NW of Keechi and on Sinclair Prairie farmout. D.&A. at 6,092 ft.

McLennan County

J. C. Kilgore No. 1 Tom Motis, R. D. Price Sur., 4 mi. E of town of West; shallow test. Loc.
Lisle Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. S.D. 1,300 ft.

Madison County

W. C. Holleman No. 1 D. C. Cannon, J. P. Phillips Sur., 7 mi. NW of Madisonville. Drlg. 560 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. Loc.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co.; G. S. Parks sur.; 17 mi. N of Clarksville. S.D. 71 ft.
Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 1,109 ft.
Texas Trading Co. No. 2 Southern Pine Lbr. Co., D. D. Briton Sur., 12 mi. N Clarksville. Cleaning out to retest.
Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 780 ft.
C. E. Whitehead No. 1 R. H. Ringwald, A. Moore Sur., 1 mi. NW of Manchester. S.D. 630 ft.

Rusk County

Drake Drlg. Co. No. 1 R. L. Needham, J. H. Chambers Sur., 3 mi. S of Laneville. M.I.M.

Smith County

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. Drlg. 970 ft.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. R.U.
Leon Gay No. 1 J. B. Gibson, W. M. Beardsly Sur., 1 mi. S of Trinity. Loc.

Van Zandt County

W. S. King No. 1 Edna W. Watson, M. G. Whitaker Sur., 5 mi. S of Grand Saline. S.D. 2,600 ft.

NORTH TEXAS WILDCATS

Archer County

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Drlg. 5,205 ft.
Panhandle Rfg. Co. No. 2-A H. O. Prideaux, A. Rohus Sur. A-1126. Spd. Sinclair Prairie No. 1 J. A. Hood, Blk. 18, A.T.N.C.L. Sur. Drlg. 4,970 ft.

Baylor County

H. F. Wilcox No. 1 J. E. Fritz, D. Bar-Low Sur. A-10. Spud.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12; 6,000-ft. test. 6⅝-in. 5,990 ft.; S.L. 5,994-6,016 ft.; T.D. 6,354 ft.; P.B. 6,069 ft. and shot csg.; treating; acd. 5,794-5,839 ft. through perfs.

Cooke County

Bin Indian Oil Co. No. 1 Alexander, T. Clevenger Sur., Abst. 1133. Drlg. 1,820 ft.
Seitz et al No. 1 C. A. Willis, L. Finley Sur. A-378. Drlg. 1,700 ft.
Sinclair Prairie Oil Co. No. 1 Mrs. J. D. Putnam, T. W. Ward Sur. No. A-1069, B.S.S.O. 4,970-83 ft.; tstg. show oil and S.W.; 9⅝-in. csg. 5,166 ft.; sd. 5,443-48 ft.; test S.W.; S.D. 6,055 ft.

Grayson County

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Spud. and S.D.

Jack County

Benoit No. 1 J. S. Rhodes "C," B.B.B. &C. Sur. A-2199. Drlg. 4,740 ft.; S.D.O.
Noah Daves No. 1 K. D. Baker, Sec. 2709, T.E.&L. Sur. 4,000-ft. test; S.D.O. 2,230 ft.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, Sec. 151, H.&T.C. Sur. Drlg. 3,807 ft.

Montague County

L. T. Burns No. 1 Maggie Mitchell, J. W. Massie Sur. A-463; 4,000-ft. test. Drlg. 4,061 ft.; S.D.O.
H. H. Powell No. 1 Arch Durhan, W. J. Wagoner Sur. A-936. S.D.O. 1,800 ft.

(Continued on Page 122)

--A. P. I.
Streamlined
SPECIAL TRAIN
TO
CHICAGO
and return

Nov. 13 Lv. Tulsa..... 4:00 P. M.
Lv. Bartlesville..... 5:00 P. M.
Lv. Kansas City.....10:00 P. M.
Nov. 14 Ar. Chicago..... 8:00 A. M.

RETURN SCHEDULE
Nov. 18 Lv. Chicago..... 5:00 P. M.
Nov. 19 Ar. Kansas City..... 2:30 A. M.
Ar. Bartlesville..... 7:25 A. M.
Ar. Tulsa..... 8:30 A. M.

Modern type Streamlined Pullman equipment and Club cars; Dining car—famous Fred Harvey meals.

For further information, reservations, etc., call Santa Fe representatives.
J. S. ROLLMAN, C. P. A.
Phone 3-0173 — 417 S. Boston Ave., Tulsa, Okla.

ROUND TRIP FIRST-CLASS FARE from Tulsa LIMIT 30 days $31.80

1938 IS A SANTA FE YEAR

PERSONAL

A. W. PEYER, JR., secretary of the Verkler-Peyer Company, Peoria, Ill., won first place and a silver trophy in the jobber-retailer golf tournament held recently in Kewanee, Ill., under the sponsorship of the Illinois Petroleum Marketers Association.

JOHANN G. WELMS was honor guest at a banquet given by employes of the James B. Berry Sons' Company, Oil City, Pa., last Thursday evening, marking completion of 41 years of continuous service for the company. Mr. Welms, who is yard foreman at the Berry refinery, received a watch, the presentation speech being given by H. E. SHOEMAKER, plant superintendent. Talks were given also by GUY HUNTER, general manager, and E. E. EBENER, engineer. Mr. Welms, born in Germany, came to this country in 1887.

DAVID KENNEDY, independent lease broker, has moved from Tulsa and established headquarters in the Byers Hotel, Mattoon, Ill.

M. R. BOWER, Standard Oil Company of Ohio, was elected president of the National Lubricating Grease Institute, meeting in Chicago last week. E. V. MONCRIEFF, Swan-Finch Oil Corporation, was chosen vice president, and F. J. SNYDER, Fiske Brothers Refining Company, treasurer.

EARLE W. GARD, for the past eight years development engineer for the Shell Oil Company, San Francisco, has been appointed director of research and development. Mr. Gard, a graduate of the University of Southern California, served during the war as an engineering officer in the United States Navy.

GEORGE S. BAYS, chief research engineer for the Stanolind Oil & Gas Company, Tulsa, who was seriously ill, is reported convalescent in a hospital in Macon, Mo.

VICTOR EMANUEL, president of the Standard Power & Light Corporation, was chosen chairman last week of the Standard Gas & Electric Company, which controls the Deep Rock Oil Corporation and which recently emerged from reorganization proceedings. Mr. Emanuel also was elected a director of Standard Gas.

FRANK A. WATTS is the new purchasing agent of the Humble Oil & Refining Company in Houston, Tex. He succeeds JOHN A. ROWE, who resigned last month. Mr. Watts, who was formerly chief engineer for Humble's sales department, is a native of California. He joined Humble in 1919. He attended Leland Stanford University, graduating with a civil engineering degree in 1919. He was in Stanford's football line.

J. B. HAYNES, of the Haynes Oil Corporation, Shreveport, La., is building a $60,000 home in Shreveport.

D. E. L. ANDERSON, of Banghola, Siam, representative of the Shell Oil Company, arrived in Los Angeles this week on his way to London and The Hague.

NORMA KOCH, for years in the San Antonio office of the Texas Railroad Commission, oil and gas division, has been transferred to the Corpus Christi office.

WALTER C. TEAGLE, chairman of Standard Oil Company of New Jersey, was renominated last week for the Class B directorship of the Federal Reserve Bank of New York. He has served two terms on this board.

ELDOR L. BUELOW, who was office manager in El Paso, Tex., for the Texas Cities Gas Company, has been appointed manager of the San Angelo division of the Community Natural Gas Company. O. B. CUSTER has been named office manager in El Paso.

DON PRATHER, of the Standard Oil Company of Kentucky, nosed out a field of 64 players to win the eighth annual golf tournament of the Kentucky Petroleum Marketers' Association with a par 72, C. W. HEALEY was runner-up with 81, and KENNETH LARMEE third with 82.

DON PRIEST, who majored in petroleum engineering at the University of California, has been transferred to the Coalinga division as petroleum engineer after having spent considerable time at General Petroleum Corporation's headquarters in Los Angeles and in the Kern River division and in the Wilmington field.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Gasoline retails in most of the United States around 20 cents per gallon. There is no tax. Prices have fallen off since July.

Fred H. Hillman has been advanced to secretary of the Standard Oil Company of California. He started out as a young telegraph operator in the National Transit offices in Bradford, Pa.

W. C. McBride, of St. Louis, is the largest individual oil producer in the world, with extensive holdings in the Pennsylvania Grade, Illinois, Oklahoma, and Texas fields.

Mr. and Mrs. H. F. Sinclair and Mr. and Mrs. James P. Flanagan, of Tulsa, have returned from an extensive European trip.

Howard S. Jones, secretary of the Iroquois Natural Gas Company, of Buffalo, N. Y., dies in Silver City, N. M.

20 YEARS AGO

The gasolineless Sunday makes a hit with the preachers. It has increased church attendance.

Daniel W. Robertson, oil tool manufacturer, dies in Bradford, Pa., at the age of 68. He was noted for his skill as a jar maker.

Lauren J. Drake, president of the Standard Oil Company of Indiana, dies of pneumonia in Chicago.

10 YEARS AGO

Shell Petroleum Corporation plans a large refinery on the Houston Ship Channel and a 10-inch pipe line from the West Texas fields to the proposed plant.

O. F. Thompson, for 35 years superintendent of the Associated Producers Company, a Tide Water subsidiary in the Eastern fields, has retired and was succeeded by D. B. Tanner. Mr. Thompson had been with the Associated 44 years.

Gasoline retails in Tulsa for 19 cents per gallon, including a 3-cent tax. Mid-Continent 37-gravity crude sells for $1.41 per barrel.

JOHN E. CARSON, independent operator, has moved from Shreveport, La., to Fort Worth, Tex., and has opened an office there.

J. W. HERBERT, Fort Worth, Tex., operator, and family have returned to Fort Worth from their summer home in Southampton, Long Island.

R. B. PIERCE, general superintendent of refineries for the Arkansas Fuel Oil Company, is back at his desk in Shreveport, La., after a three weeks' trip to the East.

JOE LEONARD, formerly with the Standard Oil Company of Louisiana in Shreveport, La., has left for Cairo, Egypt, where he will be in the service of the Standard of New Jersey.

HORACE CATTERMOLE, chief ship dispatcher of the Union Oil Company at the company's headquarters in Los Angeles and a deck officer in the United States Navy with a lieutenant rating, has just completed 25 years' uninterrupted service with Union. He is the youngest 25-year man in service.

J. R. PEMBERTON, California oil umpire, has been named to a committee by Governor Merriam to make a survey and report on wild life and game reserves in California. Mr. Pemberton is an authority on reptiles and marine life, and his new post is considered important by sportsmen, hunters, and fishermen.

W. G. MEYER has resigned as geologist for the Amerada Petroleum Corporation in Shawnee, Okla., to become associated as geologist with the E. DeGolyer interests, with headquarters in Dallas, Tex. For several years before going to Shawnee, Mr. Meyer was district geologist for Amerada in Houston, Tex.

PARAGRAPHS

PERRY OLCUTT, of the Humble Oil & Refining Company geological staff, will head the Houston Geological Society for the coming year. He was advanced from vice president. R. A. WEINGARTNER of the Stanolind Oil & Gas Company, was named vice president and CARLTON D. SPEED, JR., of the Speed Oil Company, secretary-treasurer.

DR. W. VAN HOLST PELLEKAAN, vice president of exploration for the Shell Petroleum Corporation, St. Louis, Mo., has retired from company service following 25 years of active work in geology and exploration for Shell. A dinner in his honor was attended by Shell representatives from the St. Louis, Houston, Tulsa, and Centralia offices. Born in Holland, Doctor van Holst entered the army, but an injury thwarted plans for a military career. Entering the University of Zurich, in Switzerland, he majored in geology, received his degree in 1913, and immediately went to work for the Shell group in the Dutch East Indies. He plans to join Mrs. van Holst in California, where they will spend the next few months.

BEN F. NYSEWANDER, JR., is president, W. W. LaFORCE vice president, and A. J. PAUS secretary of the North Shore Corporation, a new oil company for the West Texas region. All are residents of Midland. Chicago capital is said to be interested.

C. J. JACKSON was chosen chairman and L. C. DINGLEDINE secretary of the Dane County Petroleum Industries Committee, organized in Madison, Wis., last week. Both are Madison dealers. The new group is affiliated with the Wisconsin Petroleum Industries Committee, composed of dealers, agents, and jobbers. MEYER MICKELSON, Deerfield jobber, is vice chairman, and SAM ASPENWALL, Deerfield retailer, assistant secretary. AL BREUCK, Madison, is chairman of the legislative committee.

J. L. FINLEY resigned last week as general superintendent of the refining division of the Humble Oil & Refining Company, Houston, Tex., his action being prompted by ill health. Mr. Finley had been with Humble 17 years, starting in the refining department. Company officials indicated no immediate selection of a successor would be made.

E. G. DAHLGREN, director of the oil and gas conservation division of the Kansas Corporation Commission, will name new oil pools in that state, in accordance with a recommendation of the oilfield nomenclature committee of the Kansas Geological Society. Hitherto the committee, of which L. W. KESLER, district geologist in Kansas for the Sinclair Prairie Oil Company, is chairman, has served in an advisory capacity only.

WILLIAM REINHARDT, vice president in charge of oil development for the Union Pacific Railroad, who underwent an emergency operation in Los Angeles, Calif., last week, was reported recovering.

W. G. PRINCE, PAUL FLY, and J. H. BURNS are new additions to the Mar-Tex Oil Company, Houston, Tex. Mr. Price heads the production department, Mr. Fly the geological, and Mr. Burns the accounting.

E. L. McCRATE, a charter member of the Ohio Petroleum Marketers' Association, and L. B. LORTON, a member of the same organization, are mayors of their respective cities, Mr. McCrate of Columbus Grove and Mr. Lorton of Ansonia.

W. C. HENDERSON has resigned as production superintendent for Davis, Harrison & Bishop in the Samfordyce field and is now with the Guaranty Oil Company of Houston, Tex., as general superintendent in Texas, Louisiana, and Arkansas.

CHESTER C. CLARK, district geologist of the Union Producing Company, was elected president of the Shreveport (La.) Geological Society for the ensuing year last Friday. LESLIE S. HARLOWE, of the Grogan Oil Company, was named vice president and FLOYD MILLER, of Oliphant Oil Corporation, was named secretary-treasurer.

FRANK PHILLIPS, Bartlesville, Okla., chairman of the board of the Phillips Petroleum Company, will discuss "The Outlook for the Oil Industry and Some of Its Problems" before Roger Babson's twenty-fifth annual national business conference in Wellesley, Mass., October 17. Mr. Phillips said he would address himself to "depressed conditions" in the industry and suggest remedies.

H. C. Cooper Is Honored

The Charles A. Munroe award to the individual making the most outstanding contribution toward advancement of the gas industry was awarded by the American Gas Association to Howell C. Cooper at the Atlantic City convention Wednesday of this week. The honor went to Mr. Cooper, president of the Hope Natural Gas Company, Pittsburgh, Pa., for his distinguished work as chairman of the Main Research and Technical Committee of the Natural Gas Department of the association and for his leadership in the solution of engineering problems. The award consists of a substantial financial acknowledgement and an engrossed certificate.

HOWELL C. COOPER

Mr. Cooper was born in Oil City, Pa., in 1874, and after graduating from high school there he received private instruction in mathematics and engineering. From 1891 to 1896 he was employed in the shops of the National Transit Company, Oil City, designing machinery for the oil and gas industries. He was an ensign in the Navy during the Spanish-American War and later was engaged by the Navy Department on ship and engine design. A broad experience in engineering work followed. Mr. Cooper joined the Hope Natural Gas Company and the Peoples Natural Gas Company, subsidiaries of the Standard Oil Company (New Jersey), in 1910. He was made vice president and general manager of the Hope group of natural gas companies in 1932 and became president the next year.

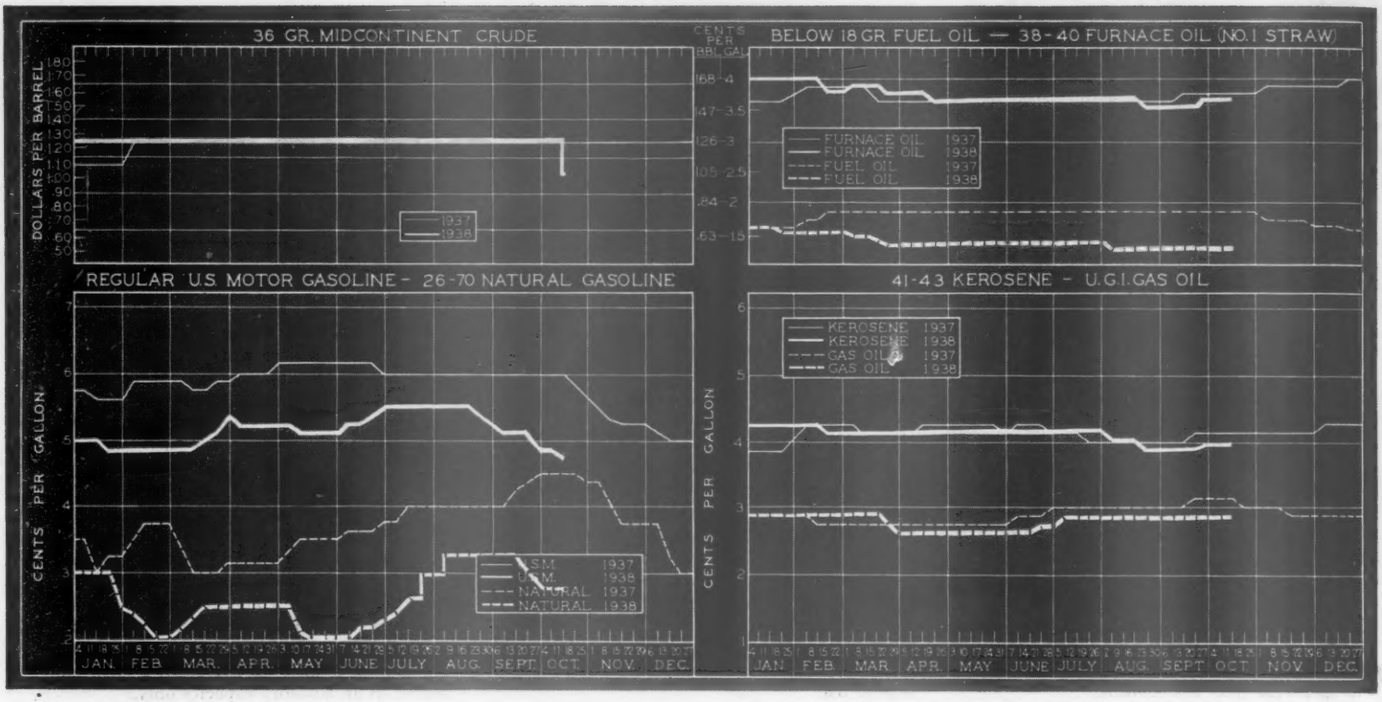
CARL O. HUBBELL, of the New York Giants' pitching staff, who has fared well in oil operations in North Texas, has moved his residence from Meeker, Okla., to Fort Worth, Tex. His company, the Hubbell Production Company, has five wells in the K.M.A. field.

W. C. SPOONER, consulting geologist, and FRANK HOOD, independent oil operator, have been appointed to a committee by the mayor of Shreveport, La., to draw up an ordinance regulating drilling and development of the new Shreveport field within the city limits.

J. KENNETH KEENAN, former Tulsa geologist and independent Oklahoma operator, has heeded the call of Illinois, opening offices in Centralia as a consulting geologist. He also has become associated with G. H. BLANKENSHIP, Centralia operator, in field activity in southern Illinois.

W. H. BURNETT, attorney, of Hutchinson, Kans., has been employed by well owners and landowners in the Hugoton gas field to gather information regarding the field and to represent them at the rehearing on the recent proration order for the seven-county field in Southwest Kansas set for Saturday, October 15, in Hugoton.

GOV. E. W. MARLAND, of Oklahoma, who headed the Marland oil interests before they were merged with the Continental Oil Company, went to Mexico last week on a mission which friends believed might be a factor in the tangled Mexican oil situation. He refused to discuss his plans, but he was reported to have taken with him statistical information concerning the United States oil situation and a proposed remedy for Mexico's petroleum problems.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Natural Gasoline Firmer in Group 3 Market, but Motor Fuel Tumbles

By T. F. SMILEY

Natural gasoline afforded a ray of sunshine this week in the Group 3 refinery market, where rays of sunshine were sorely needed. Falling quotations, crude-price reductions, plant shutdowns, and rampant competition thickened the gloom which already had enveloped the motor fuel trade. Furnace oils lacked the vigor expected of them.

Gulf Coast Buying Natural

Gulf Coast refiners have begun taking natural gasoline in large volume, ordering on contracts and purchasing in the spot market. Virtually every order asks for immediate shipment, adding to evidence that buyers, impelled by market uncertainties, had waited till the last moment before replenishing stocks; evidence too that they no longer look for lower prices. The 26-70 grade, which dropped to 2¾ cents flat in both Oklahoma and Texas two weeks ago, was invigorated by the new buying, and quotations ran from 2¾ to 3 cents. Substantial shipments were reported to have been made at the higher figure, and offerings were growing fewer. The stabilized grades were not so strong.

Temperatures along the Atlantic Coast are dropping, which means that motor fuel shipped to that region from the Gulf Coast must have higher volatility. The expanded purchasing of the past two weeks or so has done much to reduce unwieldy inventories in the hands of small manufacturers, and the increasing requirements of winter motor fuel are expected to keep the natural gasoline market in a healthier condition from now on. It is pointed out that regardless of weakness in refinery gasoline and regardless of whether the refiner sells his product at a profit or at a loss, whatever straightrun gasoline goes to the retailer's pump now must have a high percentage of natural in it. Therein is seen a basis for the belief among natural gasoline manufacturers that prices, which have been abnormally low ever since last January, have seen their worst anyway.

Another drop of an eighth-cent became effective throughout the Group 3 tankcar gasoline market last week. Weakness which had prevailed for months became more pronounced when the Standard of Louisiana announced a cut in its prices for crude. Other companies followed until schedules throughout Texas, Oklahoma, Kansas, and southeastern New Mexico had been lowered 13 to 20 cents.

Tending further to weaken the gasoline market were announcements by the Barnsdall Refining Corp. that it would close its big plant in Barnsdall, Okla., October 15, and by the Cities Service Oil Co. that it would close its plant in Okmulgee, Okla., October 20. Both actions were taken to check losses involved in plant operations. The Standard Oil Co. (Indiana) last Saturday reduced all tankwagon and dealer prices on gasoline a half-cent throughout its territory. This was done, according to a company statement, to meet competitive conditions. It was not believed the Standard's action would affect the tankcar market.

Supplies Not Plentiful

Notwithstanding the generally decreasing consumption of low-octane gasoline, buyers of that grade reported difficulty in finding supplies to meet their needs. The somewhat paradoxical situation rises from the fact that many large refiners have discontinued making this grade, having decided long ago that it was cheaper to buy it.

Signs of softness in the heating oils were attributed to unseasonable warm days in most regions. No urgent offerings were reported, but supplies were fully adequate. The lubricant group still lacked promise of a definite upturn, though it was believed overheavy inventories were being reduced slowly. The advance of a cent in 200-viscosity neutrals in Pennsylvania had no visible effect on the Mid-Continent product. Heavy industrial fuels continued to drag, but indications of moderate improvements were reported.

Refined Oil Market Barometer

Developments of the past week have increased weakness in the gasoline market. Uneasiness concerning likelihood of crude price reductions contributed to unsteadiness in refinery market. Several important plants closing because of loss on operations. Seasonal rise in demand for natural gasoline is imparting a firmer tone. Heating oils lack strength. Brisk demand for wax continues.

MID-CONTINENT. Weakness in gasoline more pronounced. Naturals slightly improved.

EAST COAST. Fuel oils lagging. Gasoline soft. Kerosene fairly active. Wax firm.

GULF COAST. Gasoline weak. Burning oils dull. General market lifeless.

CALIFORNIA. Orchard heating oil firm. Natural gasoline steadier. Heavy fuel weak.

PENNSYLVANIA. Gasoline soft. Bright stocks less firm. Neutrals in fair demand.

CHICAGO. Gasoline heavy. Kerosene dull. Heating oils improving. Heavy industrial better.

Philadelphia Markets Recover After Prolonged Price War

By H. STANLEY NORMAN

NEW YORK, Oct. 10.—Trends in the northeastern petroleum markets were mixed last week, but in general the wholesale price structure continued to drift, particularly in the case of fuel oils which normally should be displaying a more vigorous front in keeping with the nearness of winter. The outstanding favorable development occurred in Philadelphia, where the tankcar and tank-wagon markets firmed about a cent per gallon after termination of a retail price war which had flared off and on for two or three months. Most of the major suppliers in Philadelphia elevated their prices a half to a cent per gallon on branded motor fuel to the tankcar and tank-wagon trade. Atlantic Refining Co. and others active in the Philadelphia district advanced the tank-wagon price a cent per gallon to 8 cents on October 6 and the commercial tankcar price was raised a half cent to 7 cents per gallon on the same date.

The Philadelphia spot market for unbranded motor fuel of 65 octane and above has been reasonably well in line with other eastern seaboard terminals at 6¼ to 6½ cents per gallon throughout the retail price war. Most suppliers in the New York Harbor district, including Standard Oil Co. of New Jersey, lowered fuel oil prices on October 4 about an eighth of a cent per gallon on terminal and tankcar quotations. Light domestic fuel oil for consumption in residential burners was dropped to 4⅛ cents per gallon to the tankcar trade and the products were available for 4 cents when sold in barge to resellers. Industrial fuel was quoted at 3⅞ cents with gas oil, distillate, and shore plant Diesel priced at 4⅛ cents per gallon.

So-called distress fuel oil has been reaching the New York market in increasing quantities during the past two weeks, but the condition is traceable to the primary markets on the Gulf Coast of Texas and Louisiana. Deliveries of fuel oil to consumers continue to show slight improvement, but the season is not yet at hand, so far as New York and more Southern Atlantic coast points are concerned, to lift the market to early winter levels. Despite the price reduction by Standard of New Jersey last week some suppliers are still asking the old level of 4¼ cents per gallon for light domestic grades. A good part of the current fuel oil market trouble appears centered in the tank-wagon division, although there has been more or less price shading reported from some terminals for a month or six weeks.

Activity in the tanker chartering market last week was at the highest level reported for months. Tanker rates have not been materially changed, although one or two boats brought 18 cents per barrel, whereas 15 to 17 cents was the approximate range prevailing through July, August and September. The type of boats chartered indicated that the big run of fuel oil in coastwise shipping lanes is just now materializing and that October and November will be particularly active in this respect. There is the implied probability that primary markets on the Gulf Coast will feel the effect of increased shipping to northern terminals within the next 30 days.

Shipments of fuel oil and distillate burners staged a substantial gain in August, according to Department of Commerce figures released last week, but 1938 is still far in the "red" compared to eight months' records for 1937 and 1936. Oil burner shipments totaled 15,373 units during August, compared to 10,689 for July, but were more than 7,000 units behind the August, 1937, total of 22,413 units. For the first eight months of 1938, manufacturers shipped 71,405 oil burner units, compared to 116,159 for the same period in 1937 and with 99,866 for the January-August period of 1936.

The motor fuel market break, which spread to practically all states on the Atlantic Coast in the final week of September, appears to have checked the trend temporarily. Primary markets on the Gulf Coast were reported at unchanged levels last week.

Motor fuel for domestic coastwise shipment from the Gulf Coast is generally quoted at 4⅞ to 5 and 5⅛ cents per gallon for 65-67 octane, unleaded material. Higher octane motor fuel, running up to 70, is generally held for 5⅛ to 5⅜ cents per gallon. Export gasoline is quoted at 4⅝ to 5 cents, depending on endpoint and other specifications.

Demand for kerosene on the Gulf Coast and at other Atlantic Coast refining centers remains at a reasonably active pace. Prices in the New York Harbor district are unchanged at a range of 4¾ to 5 cents per gallon to the tankcar trade. Most of the kerosene on the Gulf Coast formerly offered, or at least available on firm bid, for 3⅞ cents per gallon has been elevated to 4 cents. Some western Pennsylvania refiners are sold up for October and November on kerosene and have declined to quote on open market inquiries, reserving their production for contract customers.

Industrial fuel oil for shore plant delivery and Bunker C for bunkering supplies are reported in slightly more active demand. The improved call from industrial consumers is at least partially linked with cooler weather, but activity of automobile manufacturers and their parts suppliers is probably a more important factor in the current trend. Peaceful settlement of the Czechoslovakian question terminated the "feelers" in the export market for aviation gasoline and fuel oil, but was doubtless helpful in stimulating shipping and manufacturing consumption.

The impression is gaining weight that petroleum consumption in peaceful circumstances will overshadow the temporary bulge anticipated by some in the event of a European conflict. Most observers are grateful that no direct comparison of the consumption in peace and war appears probable at the moment, but point out that the restrictions in several directions probably would overshadow the increases for military purposes.

The movement of fuel oil to inland points along the canals and waterways of the northern states will be particularly heavy the remainder of this month and during November. The New York barge canal will remain open, unless plans are altered by an especially early severe freeze and prolonged low temperatures, until the latter part of November. The practice of laying in fuel oil supplies for the winter before the barge canal closes is probably accountable for the more spirited chartering of tankers in the open market for coastwise movement this and next month. Most of the boats figuring in the past and current weeks' business were of moderate tonnage and specified as dirty.

The gains scored by wax sellers during the week preceding the Munich conference, market movement that was generally credited to the prospects of war at the time, appear to be maintained. There is talk that the market may move even higher, but adequate supplies to satisfy the current demand appear to be available at 2.35 cents for white crude scale grades.

(Continued on Page 120)

A. P. I. Weekly Refinery Statistics

Week Ending October 8, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	530,000	18,631,000	16,298,000
Appalachian	85.9	103,000	2,895,000	913,000
Indiana, Illinois, and Kentucky	89.0	448,000	10,502,000	9,432,000
Oklahoma, Kansas, and Missouri	81.6	255,000	6,054,000	4,645,000
Inland Texas	50.3	110,000	1,612,000	1,999,000
Texas Gulf	88.9	761,000	9,539,000	14,174,000
Louisiana Gulf	97.3	114,000	2,144,000	3,317,000
North Louisiana and Arkansas	55.0	35,000	465,000	796,000
Rocky Mountains	54.2	49,000	1,107,000	814,000
California	90.0	467,000	12,217,000	96,547,000
Total reported	85.5	2,872,000	65,166,000	148,935,000
Estimated unreported	.....	333,000	3,540,000	3,340,000
*Estimated total	.....	3,205,000	68,706,000	152,275,000
*Estimated total, previous week	.....	3,235,000	68,602,000	151,759,000
*October 9, 1937	.....	3,350,000	65,532,000	118,442,000

*Buregu of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending September 24, 1938	280,278,000 barrels
Week ending September 17, 1938	280,945,000 barrels
Week ending September 25, 1937	307,974,000 barrels

Figures do not include stocks of heavy, refinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of October 11, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	13.6	4.0	10.0
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	12.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	†10.0
Des Moines	14.9	13.4	4.0	†9.8
Mason City	15.3	13.8	4.0	†10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	9.7
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.8	12.3	4.0	8.5
Grand Rapids	14.3	13.0	4.0	9.2
Saginaw	15.8	14.3	4.0	8.8
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†9.5
South Bend	17.1	15.6	5.0	†8.5
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. Dak.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	7.0
St. Louis*	14.7	13.2	4.0	9.6
St. Joseph	14.4	12.9	4.0	9.3
Wichita, Kans.	13.9	10.1	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wag. on prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective August 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8.5 cents; 150 gallons and over, 8 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex grade B, 1-799, gallons 5 cents; 800 gallons and over, 4 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	12.9	10.9	4.0	8.0
Newark	12.9	10.9	4.0	8.0
Annapolis, Md.	14.35	12.85	5.0	9.5
Baltimore	13.75	12.25	5.0	9.0
Cumberland	16.15	13.65	5.0	10.0
Wash'g'n, D. C.	12.0	10.50	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	16.55	14.05	6.0	12.6
Parkersburg	14.85	13.35	6.0	11.2
Wheeling	15.75	14.35	6.0	12.2
Charlotte, N. C.	18.15	15.65	7.0	12.1
Hickory	18.65	16.15	7.0	12.5
Mt. Airy	18.45	15.95	7.0	12.3
Raleigh	17.75	15.25	7.0	11.6
Salisbury	18.25	15.75	7.0	12.2
Charleston, S. C.	16.75	14.25	7.0	10.6
Columbia	17.75	15.25	7.0	11.6
Spartanburg	18.45	15.95	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

While the above prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.4 cents per gallon for Essolene. Dealers having pumps marked only "Esso, Essolene and 'Standard White'" gasoline will pay 7.9 cents for Essolene. Price basis to all other undivided dealers above is Essolene dealer tank-wagon price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	19.0	16.0	7.0	12.0
Augusta	19.5	16.5	7.0	8.0
Macon	19.5	16.5	7.0	11.5
Savannah	18.0	15.0	7.0	10.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	21.5	19.5	9.0	10.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	20.0	17.0	7.0	9.5
Jacks'ville, Fla.	18.0	15.0	8.0	8.0
Miami	20.5	17.5	8.0	9.0
Pensacola	21.0	18.0	9.0	10.0
Tampa	18.0	15.0	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	10.5
Louisville	18.0	15.0	6.0	10.0
Paducah	18.0	15.0	6.0	10.0

*Includes 1-cent state tax.

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallons discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	14.0	5.0	13.0
Billings, Mont.	19.0	6.0	13.0
Butte	19.5	6.0	15.5
Helena	20.0	6.0	15.5
Great Falls	19.0	6.0	15.5
Salt Lake City, Utah	17.0	5.0	16 0
Twin Falls, Idaho	21.0	6.0	18.0
Boise	19.0	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline T'wag. dealer	Gasoline T'car consr.	Gasoline Inc. tax	Kero. tank wag.
Albany	14.3	12.3	5.0	9.0
*Met. N. Y.:				
M'htt'n., Bronx	13.4	12.25	5.0	8.75
Staten Island	13.4	12.25	5.0	8.75
Q'ns. & Bklyn.	13.4	12.25	5.0	8.75
Buffalo	13.6	13.1	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.5	12.9	5.0	9.0
Boston, Mass.	12.5	11.0	4.0	8.0
Portland, Me.	14.0	12.25	5.0	8.75
Manch'ter, N. H.	14.5	12.8	5.0	8.5
Burlington, Vt.	14.7	12.85	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Phil'delphia, Pa.	13.0	12.0	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'ld, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn.	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries. tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.25	16.75	*10.0	†11.0
Baton Rouge	17.25	14.75	8.0	‡10.5
Alexandria	17.25	14.75	8.0	‡12.5
Lafayette	17.50	15.00	8.0	‡12.5
Lake Charles	17.25	14.75	8.0	‡12.5
Shreveport	16.00	13.50	8.0	‡11.0
Knoxville, Tenn.	20.50	18.00	8.0	14.5
Memphis	18.50	16.00	8.0	12.5
Chattanooga	20.00	17.50	8.0	14.0
Nashville	19.50	17.00	8.0	12.0
Bristol	19.00	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	16.5	6.0	10.0
Norfolk	18.4	14.9	6.0	11.2
North Platte	18.4	15.4	6.0	11.0
Scottsbluff	19.5	13.9	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935

Oklahoma and Arkansas

CONTINENTAL OIL CO

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	12.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of Louisiana October 5 reduced tank-wagon kerosene in New Orleans 2.5 cents.

Standard Oil Co. of Indiana October 8 reduced all tank-wagon prices to consumers and all normal prices to dealers on motor gasoline .5 cent in Illinois, Indiana, Michigan, Wisconsin, Iowa, Minnesota, North and South Dakota, and Kansas. On the same date tank-wagon kerosene was reduced .5 cent.

Continental Oil Co. October 4 advanced dealer gasoline 1 cent in Cheyenne.

Socony-Vacuum Oil Co., Inc., October 10, reduced tank-wagon gasoline in Buffalo, N. Y., .5 cent.

Atlantic Refining Co. October 6 advanced tank-wagon gasoline 1 cent and commercial tankcar gasoline .5 cent in Philadelphia.

New York Market

(Continued from Page 119)

Neutral oils are still in fair demand in the Pennsylvania district and bright stock prices are maintained at the level obtaining the preceding week. Reports were current, however, that bright stocks are slightly weaker despite the fact that most refiners are keeping quotations up. Shipping instructions have slowed down over the past two weeks.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of October 11, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.03⅞	.04⅛
63-66 octane	.04⅛	.04⅜
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04¾	.05
60-62 400 grades:		
62 oct. and below	.03⅞	.04⅛
63-66 octane	.04⅛	.04⅜
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04¾	.05
64-66 375	.04⅜	.04⅝
68-70 360	.04⅞	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅞	.04⅛
63-66 octane	.04⅛	.04⅜
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04¾	.05
60-62 400	.03⅞	.04⅛
64-66 375	.04⅜	.04⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
63-66 octane	.04½	.04⅝
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05¼	.05½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅞	.04¼
63-66 octane	.04⅛	.04⅜
67-69 octane	.04½	.04¾
70-72 octane	.04¾	.05
60-62 400 grades:		
62 octane and below	.03⅞	.04⅛
63-66 octane	.04⅛	.04⅜
67-69 octane	.04½	.04¾
70-72 octane	.04¾	.05
64-66 375	.04⅜	.04⅝
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05	.05¼
65 octane	.06½	.06¾
68-70 octane	.07	.07¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04⅝
60-64.9	.04⅝	.04⅞
65 octane and higher	.04⅞	.05⅛
68-70	.05⅛	.05½

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¾	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02¾	.03
Grade 18-55		.03¼

NORTH TEXAS—

Grade 26-70	.02¾	.03
Grade 18-55		.03¼

CALIFORNIA—

75-85 375-390	.06¼	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04½	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (inland refineries)—

45	.04⅞	.05⅛
46	.05	.05¼
47	.05⅛	.05¼

CHICAGO (Based on Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43		.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅝	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.04	.04⅝

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.40
24 plus Diesel, per bbl.	1.05	1.40
24 plus Diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.85
12-17 (tankcars)	.55	.90
10-17 (high sulfur)	.50	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus Diesel, per bbl.	1.20	1.50
San Francisco:		
24 plus Diesel, per bbl.	1.45	1.55
24 plus Diesel (bunkers)	1.50	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03½
43-47 Diesel		.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunkers (bulk cargoes)	.60	.65
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
20 pourpoint	.15	.15½
25 pourpoint	.14	.14½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08⅝
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09⅝
1,500-4	.09⅝	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¾	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¾	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pourpoint	.17	.17½
10 pourpoint	.16	.16½
15 pourpoint	.15	.15½
25 pourpoint	.14	.14½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.19	.19½
10 pourpoint	.18	.18½
15 pourpoint	.17	.17½
25 pourpoint	.16	.16½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0420
125-127 (a.m.p.) wax	.0435
128-130 (a.m.p.) wax	.0445
130-132 (a.m.p.) wax	.0455
133-135 (a.m.p.) wax	.0500
135-137 (a.m.p.) wax	.0515
124-126 (a.m.p.) w.s.	.0185
124-126 (a.m.p.) y.s.	.0185
Petrolatum in barrels, carload lots:	
Dark green	.02 .02½
Amber	.02⅝ .02¾
Extra amber	.02⅝ .02¾
Lily white	.05¼ .05½
Snow white	.06¼ .06½
Cream	.04½ .04¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04⅜	.04⅝
60-62 400	.04⅝	.04¾
61-63 390	.04¾	.05
64-66 375	.04⅝	.05

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white		.04
41-43 water white		.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stock:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Crude Oil Price Changes

See Page 25 for crude price changes in Mid-Continent and Gulf Coast fields in the past week.

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (Aug. 29, 30 and Sept. 1, 1938)*	$1.25
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*Price posted by all companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .75
Schuler (Jones sand) (Sept. 17, 1938)	.85
Tullos and Urania	1.02
El Dorado East field	.90
Lisbon, La. (Sept. 19, 1938)	See note below

*Caddo Crude Oil Purchasing Co. Below 34°, 83 cents; 34°, 85 cents; 35° and above, 87 cents.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below.	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light (July 8, 1938)*†	1.05
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light (July 8, 1938)*†	1.05
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	.130
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.

(Effective January 28, 1937)

Lima	$1.00
Centralia, Ill. (Oct. 1, 1938)	1.15 to 1.25
Illinois (Sept. 27, 1938)	1.25
Princeton, Ind. (Sept. 27, 1938)	1.25
Midland, Mich. (Oct. 1, 1938)	1.02½
West Branch, Mich. (Oct. 1, 1938)	.84
Buckeye (Oct. 1, 1938)	1.00
Freeman-Redding (Mich)	1.00
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Oct. 1, 1938)	1.22
Kentucky River (Oct. 1, 1938)	1.30
Western Kentucky (Sept. 27, 1938)	1.20

*Posted by Pure Oil Co. †McClanahan P. L. and Simrall. ‡Posted by Owensboro Oil Corp. (Standard of Ohio).

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal, and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.

(Effective September 1, 1938)

Bradford, Pa.	$1.68
Allegany, N. Y.	1.68

SOUTH PENN OIL CO.

(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.34
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.28
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.18
Corning Grade Oil in Buckeye Pipe Line Co. line (Sept. 3, 1938)	1.07

PENNZOIL CO.

(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A Includes Cochran, Franklin, Hamilton and Doolittle district.	$1.61
Group B Includes Tidioute district.	1.60
Group C Includes Turkey and Tidioute districts.	1.59
Group D Includes Bear Creek and Porkey districts.	1.58
Group E Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	1.56

PURE OIL CO.

(Effective Sept. 1, 1938)

Cabin Creek, W. Va.	$1.28
Bradford Hollow, W. Va.	1.28
Kelly Creek, W. Va.	1.28

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17
TURNER VALLEY NAPHTHAS AND CRUDE OIL	
(January 5, 1938, by Imperial Oil, Ltd.)	
Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Texas Wildcats

(Continued from Page 115)

Sinclair Prairie No. 1 Hill, Blk. 71, L. C.S.L. Sur. T.D. 1,558 ft.; C.O.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Loc.

Wilbarger County

Consolidated Oil Co. No. 1 Ancell, Sec. 35, H.&T.C. Sur. 10-in. 112 ft.; 6⅝-in. 4,070 ft.; est. 150 bbls.; tstg.

Phillips Pet. Co. No. 1 M. Servatius, Sec. 78, H.&T.C. Sur., Blk. 14. 6⅝-in. 2,634 ft.; B.O.S. 2,587-2,638 ft.; tstg.

Young County

Anzac Oil Corp. No. 1 E. S. Graham, A. Hines Sur. A-135. Drlg. plug; 5⅛-in. 4,598 ft.; O.S. 4,598-99 ft.; tstg.

Horwitz & Oldom No. 1 C. J. Taach B, Sec. 248, T.E.&L. Sur. 6⅝-in. 4,113 ft.; C.O. 4,545 ft.

R. V. Tidewell No. 1 J. N. Ivey, F. L. Green Sur., Abst. 105. C.O. 1,830 ft.; Green Sur., Abst. 105. Drlg. 2,706 ft.

Wise County

H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Plts.

WEST CENTRAL TEXAS DISTRICT

Callahan County

Dobbs Oil Co. No. 1 Finley, sec. 75, Bayland Orphans Home Ld. Drlg. 1,630 ft.

Johnson et al No. 1 B. E. Higgins, Sec. 39, D.&D. Sur., Abst. 886. Loc.

Coleman County

Hoffman & Page No. 1 T. A. Drake, J. H. Woods Sur. No. 46. U.R. 2,335 ft.

Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. Tstg. 2,865 ft.

Bob Murray No. 1 Dibrell, H. Kigan Su near Camp Colorado. Acd. 2,360-65 ft.; no results.

Comanche County

Elmore No. 1 Moorman, Sec. 37, D.D.& A. Sur., 3 mi. NE of Sipes Spgs. M. I.M.

Loraine No. 1 Haile, Sec. 9, Blk. 3, H. &T.C. Sur. S.D. 2,750 ft.

Sells Pet. Co. No. 1 Smith, Sec. 12, Blk. 2, H.&T.C. Sur. S.D.; may shoot; est. 25 B.O.P.D.; tstg. 2,798 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D. 1,738 ft.

Hickok P. & D. Co. No. 1 Penn, Sec. 468, S.P. Sur. Rig.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Fsg. 2,826 ft.

Fisher County

S. and D. Daube No. 1 Hardy, Sec. 49, Blk. 2, H.&T.C. Sur. D.&A. at 3,731 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. U.R. 425 ft.

Haskell County

T. P. Coal & Oil Co. No. 1 Livengood, Pardue pool outpost. Comp.; D.&A. 3,450 ft.

Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. Cg. 1,813 ft.

W. A. Stiles et al No. 1 May Cook, Sec. 89, B.B.B.&C. Sur., 10 mi. W of Stamford; 6,000-ft. test. Drlg. 2,600 ft.; last report.

Jones County

Humble O. & R. Co. No. 1 Huddleston, Sec. 49, Blk. 18, T.&P. Sur. Comp.; 1,062 B.O.P.D.

Rex Outlaw No. 1 M. A. Moore, Sec. 10, B.A.L. Sur. D.&A. 2,163 ft.

Sinclair Prairie No. 1 Williams, Sec. 40, Blk. 18, T.&P. Sur. Drlg. 2,765 ft.

Stiles et al No. 1 Cook, Sec. 89, B.B.B. &C. Sur., western part of county. Drlg. 2,000 ft.; last report.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec 43, Blk. 19, T.&P. Sur. Drlg. 673 ft.; last report.

Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW of Sweetwater. Drlg. 1,245 ft.

Palo Pinto County

Goble-More Drlg. Co. No. 1 M. B. Costello, R. R. Williams Sur., Abst. 896. Drlg. 1,505 ft.; last report.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. U.R. 3,643 ft.

Fox & Rudd No. 1 Shotwell, Sec. 59, B. A.L. Sur. S.D. 1,600 ft.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,660 ft.

J. G. Hammond No. 1 Coker, 1,020 ft. fr. S line and 1,020 ft. fr. W lines, Sec. 159, B.B.B.&C. Sur. Drlg. 4,600 ft.

Stephens County

Lone Star No. 1 J. S. McKee, 660 ft. fr. N line, 660 ft. fr. W line, Sec. 41-7, T.&P. Sur. Fsg. 4,661 ft.

Taylor County

Charter O. & G. Co. and A. R. Forester No. 2 Frederickson, Guadalupe C.S.L. Sur., Sec. 120, 3 mi. N of View. C.O. 2,367 ft.

T. M. Knoles No. 1 Bowles, Sec. 21, B. A.L. Sur. Prep. treat 1,906 ft.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1 03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1 01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1 04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1 10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1 02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1 04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel.29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1 19	.98
30-30.9	1.10	1.10	1.00	1 07	1 02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1 21	1.21	1.00
31-31.9	1.12	1.12	1 02	1.09	1 04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1 04	1 23	1 18	1 23	1 23	1 02
32-32.9	1.14	1.14	1 04	1.11	1 06	....	....	1.09	1 28	1.25	1.25	.92	1.20	1.06	1 25	1 20	1 25	1 25	1 04
33-33.9	1.16	1.16	1.06	1.13	1 08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1 27	1 22	1 27	1 27	1 06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	0.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	....	1.31	.98	1.26	1.12	1.31	1 26	1 29	1 29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	....	1.33	1.00	1.28	1.14	1.33	1 28	1 29	1 29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	....	1.35	1.02	1.30	1.16	1.35	1 30	1 29	1 29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	....	1.37	1.04	1.32	1.18	1.37	1 32	1 29	1 29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	....	1.39	1.06	1.34	1.20	1.39	1 34	1 29	1 29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Oct. 8 High	Week ending Oct. 8 Low	Week ending Oct. 8 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	73	69½	71	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$3.04	$2.52	$2.00	114⅞	51½	125½	75
27⅜	17¾	24⅛	22½	22¾	Atlantic Refining	2,663,999	$25	25cQ	9-15-38	3.51	2.59	1.00	37	18	35⅛	26⅝
23⅜	12⅛	22½	20	21¾	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.91	1.14	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	18⅞	16⅜	17	Barnsdall Oil Co.	2,250,344	$5	25cQ	11-1-38	0.85	1.01	1.00	35¼	10	28¼	14⅛
10¾	7	9¼	8⅞	9	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	11-15-38	1.48	1.18	.90	17⅞	7	17¼	11½
35⅜	21¼	31¼	28⅛	28⅜	Continental Oil of Delaware	4,682,583	$5	25cQ	9-30-38	2.98	2.05	1.50	49	24	44⅞	28⅛
9¾	5	8¼	7⅜	7½	Houston Oil (new)	1,098,618	$25	....	10-17-30	0.94	—0.03	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	17½	16¼	16¼	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	2.86	2.57	1.50	35⅜	14	30⅞	17¼
17¾	10⅝	15	14	14¼	Mission Corporation	1,382,945	$10	$1	6-29-38	1.31	0.48	1.25	34	15	29⅞	16⅝
23	12½	18⅜	16	17¼	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	4.90	2.02	(‡)	41⅜	17⅜	75½	19⅞
14⅞	8⅞	10⅝	9½	9¾	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.30	0.70	1.00	22⅞	8	18	12⅛
15⅞	10¼	12½	11⅝	12	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	1.39	1.58	.75	29¾	11¾	23½	11¾
9¼	7	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	1.18	0.52	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	42½	38¼	38⅞	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-38	5.42	4.02	2.75	64	30⅛	52⅜	33⅛
25⅜	15	23⅜	21⅝	22	Plymouth Oil Co.	1,029,800	$5	35cQ	6-30-38	2.85	1.65	1.65	29⅞	13	27⅜	11⅞
13½	8¼	10¾	9¾	10	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	2.15	1.63	.25	24⅜	8¾	27⅞	16
8⅞	5	7⅞	6⅞	7	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	0.35	....	.25	6½	4⅛	..	..
27½	15½	22⅛	20½	20½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-38	1.97	2.00	1.00	54⅛	16	44	30½
18⅜	10	16⅜	15⅝	16	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.44	1.57	1.00	34⅜	14⅞	28¼	14⅜
34¾	18½	25⅞	23⅝	24	Skelly Oil	1,003,949	$15	50c	6-25-38	6.07	4.42	1.50	60⅝	26½	47⅜	19½
16⅜	10⅜	14⅜	13½	13⅜	Socony-Vacuum	31,151,071	$15	25c	9-15-38	1.82	1.38	.80	23¼	13	17½	12½
34⅞	25⅛	30⅞	29⅛	29½	Standard Oil of California	13,014,754	N.P.	35cQ†	9-15-38	3.17	1.79	2.00	50	27⅛	47⅝	35
35½	24⅜	31¼	28⅜	29	Standard Oil (Indiana)	15,267,030	$25	25cQ	9-15-38	3.66	3.09	2.30	50	26½	48½	32¾
42	32½	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	6.93	1.91	5.00	43	30⅝	31	25
58⅝	39¾	55⅛	52½	53	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	5.64	3.73	2.50	76	42	70⅜	51⅛
59	45	53¾	53	53¼	Sun Oil	2,316,484	N.P.	25cQ	9-15-38	3.86	3.25	$1 & 8% stk.	77½	44½	91	70
4¼	1¾	3½	3	3¼	Superior Oil Corp.	1,388,079	$1	....	.....	0.32	0.14	....	7¾	1½	6¾	3
49⅝	32⅝	46⅝	43	43¼	Texas Corp.	10,875,006	$25	50cQ	10-1-38	5.02	4.10	2.25	65⅛	34¾	55¼	28⅞
5¼	2⅝	4¾	4	4⅛	Texas Gulf Producing Co.	888,138	N.P.	10c	12-23-37	0.68	0.93	.10	9⅝	2	8⅞	4⅜
12½	7	10⅝	9¾	10	Texas Pacific Coal & Oil	888,237	$10	10c	9-1-38	1.11	0.72	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	13½	12¾	12¾	Tide Water Associated	6,369,175	$10	25cQ	9-1-38	2.08	1.03	1.20	21⅝	13⅛	21¾	14⅜
22½	17⅛	21½	20¾	20¾	Union Oil of California	4,666,270	$25	30cQ	8-10-38	2.58	1.40	1.40	28¼	17½	28½	20¾
23½	20	22⅛	21⅜	21¾	Union Tank Car Co.	1,200,000	N.P.	30cQ	9-1-38	1.70	1.76	1.60	31½	22	31⅝	22⅝
3½	1⅝	2⅜	2½	2⅜	Wilcox Oil & Gas	506,522	$5	...	5-10-28	0.24	—0.06	....	6¼	1¾	5¼	2¾

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

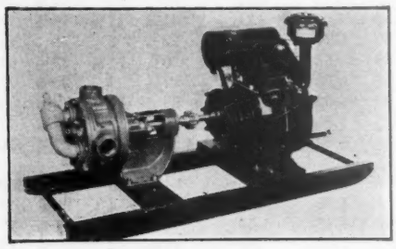
1938 High	1938 Low	Week ending Oct. 8 High	Week ending Oct. 8 Low	Week ending Oct. 8 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	10½	9¼	9¼	American Republic Corp.	1,308,049	$10	10c	7-11-38	$0.27	$0.28	$0.40	10	6⅝	..	..
10¼	4⅞	7¼	6½	6⅞	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	1.90	1.26	2.00‖	21⅜	7	21	13¼
39	26	25¼	24¼	24¼	Buckeye Pipe Line Co.	200,000	$50	25c	9-15-38	4.02	4.40	3.75	51½	36	50	39⅜
114	97	114½	113½	114½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-27-38	6.73	7.46	7.00	123	95½	124⅜	105
11	5⅛	8½	7¼	8½	Cities Service (new)	3,714,317	$10	....	6-1-32	1.02	0.13	....	5⅜	1½	7⅜	3
2⅜	⅞	1¼	1	1	Cosden Petroleum	462,551	$1	....	.....	0.19	....	.....	5½	1½	4½	1½
27½	17½	22¼	20⅛	20⅛	Creole Petroleum	6,975,383	$5	50cSA†	6-10-38	1.61	1.23	1.00	38¾	20¼	39	19⅞
10¼	5½	10⅛	9	9½	Darby Petroleum	351,390	$5	25cSA	1-15-39	1.36	1.26	.50	18⅝	6½	18⅛	9
3½	1¾	2⅛	2	2⅛	Derby Oil & Refining	263,162	N.P.	....	.....	1.34	0.66	....	8⅜	2¼	6¾	1⅞
31	19½	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-38	—0.12	—0.62	4.00	47½	24½	47½	38½
46⅞	33	41¾	38⅛	39	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-38	3.51	2.90	1.00	63½	33	59	36
72⅝	56	67¾	63	65	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-38	5.22	3.80	2.00	87	54⅞	80	57
19½	14⅛	17⅞	17⅛	17⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	0.98	0.95	1.25	24¼	14½	24½	19¾
9⅜	6⅝	7⅞	7½	7⅝	Indiana Pipe Line	300,000	$10	30c	5-14-38	1.03	1.00	.80	15	5⅞	9⅜	5½
31¼	21	27	25	26¾	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	....	1.81	2.50	39½	23½	39⅝	32⅝
5	2¾	3⅞	3½	3⅝	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	0.17	0.20	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	24¼	22¼	22¼	Lion Oil Refining	434,820	N.P.	25cQ	10-10-38	2.17	1.43	1.50	34	12½	17¾	7⅜
10¼	6⅝	9½	9	9½	Lone Star Gas	5,553,747	N.P.	20c	8-20-38	1.14	1.02	.60	14¼	5¼	14¼	9⅞
9⅜	6½	8⅛	7	7	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	9-15-38	0.58	0.64	.50	15¼	6¾	15⅜	9⅞
9¼	6⅜	8⅝	8	8⅜	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.14	0.95	1.00	14⅝	6¼	..	..
5⅜	4½	5¼	5	5⅛	Mountain Producers	1,593,584	$10	30cSA	6-15-38	0.76	0.62	.60	7⅞	4⅛	8⅜	5
14⅝	11½	13	12½	12½	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-38	0.96	1.19	1.00	19½	12	23	17⅜
9¼	6⅝	7⅛	7	7⅛	National Transit	509,000	$12.50	35cSA	6-15-38	1.19	0.79	1.00	12½	7¼	15¾	9¼
2⅝	1½	2¼	1½	2⅛	New Mexico and Arizona	1,000,000	$1	1c	12-1-38	0.02	0.02	....	5	1⅛	6⅝	1⅝
4½	4	..	..	..	New York Transit	100,000	$5	15c	10-15-38	0.49	0.34	1.00	5⅜	3⅜	6¼	4¼
6	4	4⅞	4⅞	4⅞	Northern Pipe Line	120,000	$10	20c	6-1-38	0.78	0.66	1.00	12¾	5¾	9¾	4⅞
7⅜	3½	5¼	4½	4⅝	Pantepec Oil	2,441,142	$1	....	.....	....	0.05	....	9⅝	2¾	10⅛	3¼
3½	1⅝	2¼	2	2⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	—0.17	0.45	.25	13¾	2	19¼	4½
4	2⅛	3¼	3⅛	3⅛	Ryan Consolidated	296,931	N.P.	....	.....	0.46	....	....	6½	2¼	4⅜	1⅞
5⅜	3⅜	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	0.85	0.41	.45	7¼	3⅞	7⅞	3¼
39	28¾	35	34	35	South Penn Oil	1,000,000	$25	37½cQ	9-30-38	4.64	3.59	3.65	56	35	44	32½
22¼	19	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	10-1-38	0.95	0.97	2.00	42	20	60	44
18¾	15	17¾	17½	17½	Standard Oil of Kentucky	2,604,790	$10	25c	9-13-38	1.60	1.46	1.50	21½	14¾	23⅜	17¼
8¾	6⅛	8	7⅞	7⅞	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	—0.58	0.42	.25	13¾	8	14⅝	11
22¾	16¼	22½	21¼	22½	Standard Oil of Ohio	753,740	$25	25c	9-15-38	3.67	4.77	1.50	45	16	40	21¾
3¼	2⅛	2⅜	2¼	2¼	Sunray Oil	2,006,176	$1	10c	12-24-37	0.42	0.26	.25	4⅞	2	5	2⅝
5	3½	5¼	4½	5¼	Texon Oil & Land	936,024	$2	15cQ	9-30-38	0.51	0.36	.45	7⅝	2	9¾	5⅜
7⅝	4¼	5⅜	5	5½	Transwestern Oil Co.	750,000	$10	....	.....	0.48	0.06	....	13⅞	4⅝	..	..
5¼	2¾	3¾	3⅜	3¾	United Gas Corp.	7,818,959	$1	....	.....	0.25	0.20	....	13⅜	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. ‖Of which $1 was in preferred stock.

New or Improved Equipment

Viking Rotary Pump Is Newest Offering of Warner Lewis

The Viking rotary pump, Model L-120, rated at 90 g.p.m. at 400 r.p.m., is announced by Warner Lewis Co., 230 East Third Street, Tulsa, as an addition to its line of pumping units. It is built for severe use, such as it is likely to encounter in the oil field. It has an extra-long stuffing-box and

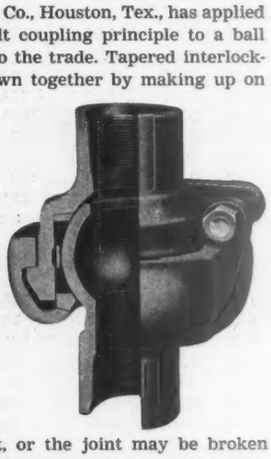


rotor locked with thrust bearing to prevent excessive wear and end play. The standard unit is iron-fitted, but it is available also bronze-fitted or all bronze. It is provided with a sturdy base, electric-welded and designed to eliminate unnecessary weight. Power is a Briggs & Stratton 4-horsepower air-cooled gas engine, complete with 6:1 built-in reduction. All exposed gearing or belt drives have been eliminated in order to reduce size of the unit, its weight and hazards. The complete unit weighs only 310 pounds.

Applications of this new pump include pumping crude oil, fuel oil, gasoline, road oil, water, tank-bottoms, etc. Additional models in all sizes from one-half to 1,000 g.p.m., equipped with either rotary or centrifugal pumps and powered with any engine specified, are available.

Unibolt Coupling Principle Now Applied to New Ball Joint

Thornhill-Craver Co., Houston, Tex., has applied the patented Unibolt coupling principle to a ball joint, now offered to the trade. Tapered interlocking shelves are drawn together by making up on a single bolt, thus applying equal pressure on the packing entirely around the ball member. There are no threads between the component parts of the joint.



After the joint has been in service for a long time, it may be tightened by making up on the one bolt, or the joint may be broken easily for repairs. The packing is a special composition impervious to oil, water, or gas under high pressures and temperatures. The packing rings are identical, and therefore interchangeable. A spacer ring is provided between the packing rings to hold them securely in sealing position. Bronze thrust rings above and below the packing rings limit compression of the packing, effecting a metal-to-metal contact in the event of undue overload.

The Unibolt ball joint is recommended for high-pressure steam lines, flexible manifolds, boiler headers, mud lines, etc., on all conveyors of oil, water, gas, gasoline, air, and steam to take care of contraction and expansion, to simplify misaligned connections, and to prevent damage caused by intermittent vibration. It is available in cast steel only for 4,000 pounds test pressure, 500 pounds steam working pressure, in sizes from 2 to 4 inches. A 1½-inch size is also available in 6,000 pounds test pressure, and 6-inch size in 2,500 pounds test pressure. Misalignment ranges up to 38 degrees, depending on the size of the joint. All parts for a given size are interchangeable.

Bulletins, Booklets and Other Literature for the Trade

A request to Sullivan Machinery Co., Woodlawn Avenue, Michigan City, Ind., brings a bulletin describing a new portable core-drill.

The Nicholson "Gasoline Special" trap for handling gasoline of any specific gravity is described and illustrated in a bulletin announced by W. H. Nicholson & Co., 12 Oregon Street, Wilkes-Barre, Pa.

Importance of an effective drainage system that will remove all air and condensate from steam lines and equipment as fast as it forms is emphasized in the current issue of the Armstrong Trap Magazine, published by Armstrong Machine Works, Three Rivers, Mich.

Operating costs and specifications of the 25-hp. "Caterpillar" Diesel D2 tractor are given in a booklet just published by Caterpillar Tractor Co., Peoria, Ill.

Dry boric-acid power fuses for protection of high-voltage circuits and equipment, applicable in utility and industrial power plants and for all high-voltage power use, are described in an illustrated booklet published by Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Petroleum Rectifying Co. of California, lessor of the petroleum electromatic desalting process, has been carrying interesting articles on "Determination of Salts in Crude Oils" in its house publication, the Electric Dehydrator. These articles are by C. H. M. Roberts and R. W. Stenzel, members of the Petreco technical staff. Copies may be obtained gratis by adddressing the company at 530 West Sixth Street, Los Angeles, Calif.

Bower Enters Industrial Field

A new entry in the industrial roller-bearing field has been announced with the appointment of Ahlberg Bearing Co. as nation-wide distributor for the products of Bower Roller Bearing Co. of Detroit, Mich. While the Bower company has manufactured roller bearings for almost a quarter of a century its sales have been confined almost entirely to the automotive industry. Distribution of the Bower line is to be made in the industrial field through the Ahlberg company which will continue to be a source of supply for RBC roller bearings, Norma-Hoffman ball bearings, CJB Master ball bearings and Ahlberg ground bearings. The 34 branch warehouses of Ahlberg and its associate, Precision Bearings, Inc., of Los Angeles, will handle distribution of the full line.

Jones Celebrates Birthday of Normalizing With Big Cake

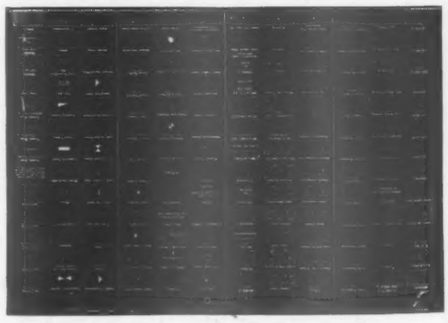
P. C. Jones, president of the S. M. Jones Co., Toledo, Ohio, has just cut a 4-foot birthday cake by way of celebrating the tenth anniversary of

fully normalizing in the sucker-rod industry. Mr. Jones had Toledo's top-notch baker prepare this giant cake with 10 candles and deliver it to the factory, where he cut it at the normalizing furnace with a 3-foot knife.

Fully normalizing, which gives sucker-rods greater strength and ductility, was the result of studying ringworm corrosion in Smackover, Ark., in 1927. Mr. Jones introduced the procedure the next year.

Post Chart Simplifies Hunt for Authentic Drafting Symbol

Many persons have been "stumped" in trying to locate the authentic drafting symbol for some form of construction. With dozens of different sources for various groups of hundreds of symbols, such a hunt is apt to take on the proportions of a

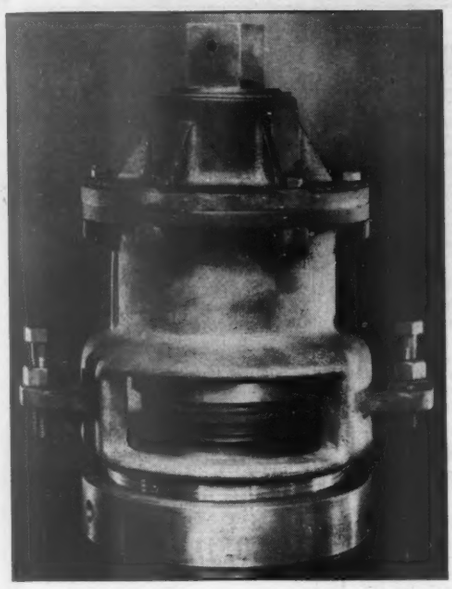


major research. To eliminate this difficulty the Frederick Post Co., Box 803, Chicago, manufacturer of engineering and architectural equipment, has compiled on a single chart 249 symbols which were selected, with the cooperation of architectural and engineering societies and groups, from more than twice that number.

With professional help the Post company was able to reproduce the "everyday" together with a great many of those hard-to-find symbols on a single chart 26 by 35 inches which it is distributing to architects, engineers and users of drafting-room supplies. A request to the company, or a telephone call to the nearest Post distributor will bring the required number of charts.

Major Troubles With Tankcar Outlet Valves Eliminated

Most of the difficulties encountered with tankcar outlet valves can be traced to corrosion, to scale or other foreign matter on the seat, or to



breakage caused by workmen forcing the valve past its proper seating position. Scale and the forcing of valves often go together. The scale holds the valve open while the workman tries to force it closed. When a valve housing is broken by forcing, an expensive repair job is necessary.

In addition to the possibility of causing breakage, scale and corrosion may cause a valve to stick or freeze in action. When this happens the liquid in the car must be removed through the dome, an expensive and waseful process.

The prevalence of these failures led to the development of a new valve designed by George Valve Co., Saegerstown, Pa. It is said to overcome the major causes of valve failure and includes other improvements.

Corrosion of the valve parts is obviated by the use of virgin bronze, thus eliminating freezing. Virgin bronze is used also throughout to prevent corrosion by galvanic action.

The presence of scale or other foreign matter between valve face and seat is eliminated, first by sealing the face of the valve while it is open, and second by providing a wiping action which cleans the seat of scale every time the valve is closed. These advantages are obtained by the use of two neoprene parts, which are essentially rings surrounding the face of the valve disc when in the open position, although the lower one is webbed across the base of the disc.

Neoprene, du Pont's chloroprene rubber, was used for these rings because it was necessary to employ a resilient material which would resist deterioration from contact with chemicals and petroleum derivatives, the liquids commonly carried in tankcars. Since the seat is always clear of scale it is not necessary to force the valve to close it tightly. Nevertheless the design includes another innovation which is planned to do away with breakage even though the workman uses unnecessary force.

Here and There With Men Who Manufacture Equipment

Weiss Chain & Transmission Co. has opened headquarters at 224 East Third Street, Tulsa, where it will represent two large manufacturers in the State of Oklahoma, namely, Whitney Chain & Manufacturing Co., Hartford, Conn., manufacturer of roller and silent chain and sprockets, and Quaker City Rubber Co., manufacturer of belting, hose and packing. F. H. Weiss, who has been in the supply business in Tulsa since 1920, and his son, J. C. Weiss, are associated in the business.

Independent Exploration Co. has opened offices at 935 Kennedy Building, Tulsa, with R. A. LeMay in charge.

Different Procedure Is Offered for Removing Boiler Scale

A departure from common methods of removing and preventing boiler scale and rust is described in a bulletin on the Corrosan process, just published by Ferrotect Industries, 787 Varsity Road, South Orange, N. J. In contrast with methods which require constant testing and treating of the entire feed-water supply, Corrosan is applied only periodically and without regard to the nature of the feed-water. It is self-applying, and is said to remove and prevent scale and rust in inaccessible parts of the boiler without a shutdown.

Corrosan has been widely used here and abroad for over 25 years. The manufacturers say it will: (1) Loosen, break up and remove accumulated scale; (2) keep the boiler scale-free, and eliminate the need of mechanical tube-cleaners, water-softeners, boiler compounds and feed-water analyses, regardless of the condition of the feed-water; and (3) eliminate and prevent rust, pitting, corrosion, crystallization, and blistering.

Other products described in the bulletin are Aquasan, for rustproofing metal exposed to water and its vapors; Chemisan, a protective coating against chemicals, corrosive vapors, brine, sea water, etc., and Hytempsan, a high-temperature coating for stacks, flues, Diesel exhaust lines, and economizers.

Touch Control Adds Speed and Accuracy to Drafting Work

The Bruning-Wallace touch-control drafter, announced by the Charles Bruning Co., 100 Reade Street, New York, is said to bring new speed, smoothness and accuracy to the drafting process. The new method of controlling the protractor - head, known as touch control, provides responsiveness of the machine to the draftsman's wish and eliminates all fumbling or other waste motion in operating the machine.

The touch-control button is located on the protractor-head, where it is always conveniently under the draftsman's thumb. A touch on this control-button releases the head, allowing it to rotate freely to the desired setting. Simply lifting the thumb locks the head positively at the desired automatic index stop. A slight turn of the control-button allows "free wheeling," enabling the head to rotate freely. With touch control, it is stated, the operator can concentrate on his work and is not required to pay undue attention to the operation of his machine. The thumb-latch has been eliminated.

The new drafter is designed especially for the use of mechanical, architectural and structural draftsmen. The Charles Bruning Co. also announces a new civil engineers' drafter, especially designed for the use of map draftsmen and navigators. This drafter provides a quick, accurate method of plotting maps directly from the surveyor's notes.

NEW J&L WELL CASING FEATURES DIE-FORGED BELL

Loading first shipment of the new bell-and-spigot oil-well casing

With the initial shipment to users in the oil fields, the Jones & Laughlin Steel Corp., Pittsburgh, Pa., announces addition of a seamless bell-and-spigot casing to its line of oil-country products. This casing, made for welding in the well, features exclusively a die-forged bell.

This new-type bell is formed by upsetting the casing instead of by the conventional expansion operation. The die-forging operation forms a heavier bell wall, increases the effective welding area and assures a concentric correct diameter, which by its uniformity makes possible easy stabbing and helps to maintain true alignment of the bell and spigot during welding.

The die-forging operation also provides a gentle slope or shoulder from bell to pipe wall, which aids in relieving internal stresses arising from expansion during welding and transmits loads away from the joint while in service. In addition, the steel used in the manufacture of the new casing is of a grade especially selected for its welding properties.

A series of full-section tensile tests show that in a majority of cases the joint strength was as great as the pipe itself, with joint efficiency records ranging between 96 and 100 per cent. The new J&L bell-and-spigot casing will be available in sizes ranging from 5½ inches, O.D., to 10¾ inches, O.D., inclusive.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS

All cases submitted given personal attention.

Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees—FREE

LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

Leases and Drilling Blocks

SECURITY ABSTRACT COMPANY
El Dorado, Union County, Arkansas, Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

FOR SALE—Blocks of 100 to 10,000 acres 5 to 10 year term oil and gas leases located on structures near oil and pas producing wells. Two structures are geologically approved. Depth of drilling 450 to 800 feet. W. P. Harley, Bowling Green, Kentucky.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

SOUTHEAST NEW MEXICO
Subdividing 160 acres in tracts as small as 1¼ acres. Buyers share in oil, gas and minerals under entire 160. Prices wholesale and retail. Wholesale prices quoted only to established dealers. Other bargains in State Leases and Royalties. Write for map and literature.
HARRY S. WRIGHT
Box 347, Santa Fe, New Mexico.

N. MEX. Landowners Royalty, Lea County 1/32nd mineral deed, $50 full price T. P. Coal & Oil Co. 160 acre lease. Roy G. Barton, Hobbs, New Mexico.

YOAKUM CO. TEXAS OIL LEASE—Situated on geophysical high near production, for sale, consisting of south halves Sec. 596 and 597. Write best offer. Owner Dr. J. A. Robinson, 233—21 Place, Santa Monica, California.

BEST DEAL in Kansas. Geologist has 1000 acres checker-boarded on proven structure, offsetting drilling well, that offsets well with 38 feet pay in 1st break in Mississippi Lime. Price $1500. Particulars
BOX 10
KINCAID, KANSAS.

VACUUM POOL NEW MEXICO
40-Acres Sale or Sublease NE¼ SE¼ Sec. 8-17S-35E. Sacrifice basis ED NEWTON, 300 Bankers Bldg., Los Angeles, Calif.

LEASE for drilling 80 A. at once near production Monument, N. M. Write Box 171, Route 2, Roswell, New Mexico.

LEASES-ROYALTIES near Ordovician and Woodbine-Paluxy sand wildcats, quick plays for 50 for 1.
E. CROFT, PROCTOR, TEXAS.

LEASES—LaRosa field, Refugio Co., Ector & Terrell. 600 Ward fee. Anderson, 1014 Cumberland, Dallas, Texas.

BROKERS, Investors Investigate Cheap Lands, Oil Acrge. ahead of Active Drlg. and quick advances. Box 54, Marshall, Tex.

Leases and Drilling Blocks

MY AUG.-SEPT. offers of 80 a. gas-proven, one well, $850 are all taken. October offers are: 80 or more acres. I drill one well on each, equip for gas, assign lease (Full 7/8) and well for $950 your total cost. 300% year on your money possible. Pipeline market pays 8c per M.
MR. BUDDENBORG
Osawatomie, Kansas.

PARTY now conducting special geophysical exploration surveys for oil promise is often in contact with drilling block opportunities, leases, production, royalties and sometimes capital for development where favorable conditions exist. P. O. Box 364. Fort Worth, Texas.

WILL purchase producing lease in eastern Kansas. No brokers. A. L. Harper, 430 East 17th St., Hutchinson, Kansas.

OWNERS, Brokers and buyers of bargains in Oil production, Leases, Royalties and Lands. I have many buyers and many bargains, and need many more for my clients. Am not a broker. See or write E. B. Reeves, Box 13, Alanreed, Gray Co., Texas.

FOR LEASE N½ NE¼ section 7-13-6E. Lincoln Co. Oklahoma. H. E. POWERS, R. 6, St. Joseph, Missouri.

NEW MEX. LEASES; Lea, Eddy, Chaves, Roosevelt, other SE Counties, 40,000 ac. blocks or spreads. Legitimate inquiries invited. GEO. M. COWELL CO., 412 W. 6th St., Los Angeles, California.

WILL LEASE to responsible party for Oil and Gas development—158 acres in South Central Indiana. E. S. Brown, 2752 Winthrop Avenue, Indianapolis, Indiana.

I OWN 3,000 acres free in N. Pittsburg and Atoka Cos., Okla. 40 to 1000 A. tracts. No trades. Cash sale, lease or royalty, $5 to $25 per A. Townsite on 2 RRs. near production. J. E. Cavanaugh, Baker, Ore.

FOR SALE: Oil lease, Nowata Co., Okla., 80 acres, 18-26n-16e. 7 wells, depth 740 ft., 35 ft. of sand, present production 8 bbls. Water flood being installed in immediate vicinity. Air pressure on adjacent property highly successful. Lease has great possibilities if properly improved. Price $12,000 cash. M. J. Regan, Coffeyville, Kans.

Incorporations

DELAWARE CHARTERS: Complete service $35. Sumbitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Situations Wanted

GRADUATE Engineer. 15 years' experience, oil and production and distribution natural gas, repressuring oil sands. 3 yrs. with state service commission regulating gas companies. Employed, desire change, prefer producing oil. Address Box J-553, The Oil and Gas Journal, Tulsa, Okla.

OFFICE MAN, bookkeeper, correspondent, 26, now employed by Central Texas wholesale tire and auto supply firm, desires position with oil or gas company, or oil well supply company. Experienced perpetual inventory systems. Good character, excellent references. Picture, references, and application letter on request. Go anywhere. Address Box J-590 The Oil and Gas Journal, Tulsa, Oklahoma.

ATTORNEY, 38, married, sober. 10 yrs.' field experience in leasing, production, drilling. Will do field work or legal work. Address Box J-594, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

WANTED

Man thoroughly experienced natural gas business and in sale and distribution natural sweet gas and capable interesting capital to finance building of pipeline and marketing of gas from large natural gas reserve already fully developed. Address

Box J-593
The Oil and Gas Journal
Tulsa, Okla.

For Sale—Maps

OPPORTUNITY to purchase OIL MAPS at less than printing cost. Office copies and imperfect prints, regular prices from $7.50 to $15.00. Many active areas in Texas and New Mexico included.
$2.00 Net Each
ZINGERY OIL MAP COMPANY
Fair Building Fort Worth, Tex.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Hobbs, New Mexico.

WRITE US TODAY
For our offering of producing and nonproducing oil royalties.
RUBUSH and COMPANY
1307 Pacific Ave. Dallas, Texas.

WE COVER the Permian Basin in Texas and deal in Oil Leases, Royalties, and drilling Blocks. Porter and Cumbie, Box #572, Jayton, Texas.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principle of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years' experience. The physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Avenue, Torrance, California. Phone 983.

Ranches and Farm Lands

TWIN SPRINGS, large flow, Ozarks, clear water, ideal fish lakes, location with 160 acres crop, grass and timber land $15 an acre, near town, new house. Joe England, Cassville, Missouri.

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

INQUIRIES SOLICITED FROM CORPORATIONS INTERESTED IN RAISING CAPITAL THROUGH THE MARKETING OF CORPORATE SECURITIES.
BROWN HARTWELL COMPANY
110 EAST 42 ST., NEW YORK.

"NEW type capital financing by banks" started August 1938. 1500-word mimeo. bulletin $1.00. List of America's 64 leading underwriters who bought $300,000,000 in securities in 3 months of 1938, $3.00. JOHN MORRIS, 1040 South Paxon, Philadelphia, Pennsylvania.

WANT TO BORROW $40,000 on producing oil and gas property. 5000 acres. No proration. Address Box J-592, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma